WORKSHOP FOR ELEMENTARY TEACHER EDUCATORS ON PREPARATION OF LOW-COST TEACHING AIDS AND TECHNOLOGICAL ADVANCEMENT FOR TEACHING DISABLED CHILDREN

(DECEMBER 13 - 17, 1993)
VENUE : CONFERENCE HALL, RCE, BHUBANESWAR

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NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING
NEW DELHI

TABLE OF CONTENTS

Preface

Approach Paper

Brief Report

List of Participants and Resource Persons.

Time Table.

Education of Children with Disabilities

Strategies Involved in the Effective Planning and Utilization of Low Cost Teaching Aids.

Microcomputer and Children with Special Educational Needs.

Mental Retardation: Concept, Identification, Etiology, Symptoms, Remediation.

Identification and Referral of Mentally Retarded

Psychological Assessment and Identification of Mentally Handicapped Persons.

Early Identification of Educational Problems.

Individualized Educational Programming

Integrated Education of Mental Retardates

Computer Assisted Instruction for Children with Mental Handicap

Speech & Language Aspects of Mental Retardation

Behaviour Modification for Management of Problematic Behaviour in Mentally Retarded Children.

Occupational Therapy for Mentally Retarded

Parental Reactions and Home Bound Programmes for the Mentally Retarded Persons.

Plus Curriculum

Educational Innovations for the Visually Handicapped in a Technological Era

Physical Education and Games for the Visually Handicapped

Integrated Education of the Visually Handicapped

Aids and Equipments of the Resource Room

Instructional Resources

Disabled Children and Bihar Education Project

Assignments

Keys to Assignments

Proformas for Psychological Investigation.

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PREFACE

A "Workship for Elementary Teacher Educators on Preparation of Low Cost Teaching Aids and Technological Advancement for Teaching Disabled Children" was conducted in this college during 13 - 17 Dec. 1993. Thirty Teacher Educators from the Eastern Zone were invited for this programme and the response was 100 percent.

The Programme was directed by Dr. S.K.Goel, Reader in Special Education. Besides lectures by internal and external resource persons, practical demonstration was given how to prepare low-cost teaching aids for the handicapped. Slides, Transparencies, Audio and Video Cassettes were also presented. Practical demonstration of Technical Aids and Appliances and an exhibition of literature in special education were organized. A feedback was obtained from the participants by completing assignments on all the five disability areas, viz, Mental Retardation, Learning Disability, Speech & Hearing Disorders, Orthopaedic Disabilities, & Visual Handicap.

This is the first programme of its kind for the development of teaching aids and creating awareness about the technological advancements among the teacher educators of special Need Children for the Eastern Region. I very much appreciate the role of Dr. S.K.Goel in conducting this useful programme and I congratulate him for bringing out a comprehensive report for the benefit of participants who are engaged in handicapped welfare. I am grateful to Extension Department for rendering all possible assistance.

Prof. K.C.Panda
Principal

February 1994
Regional College of Education
Bhubaneswar

REGIONAL COLLEGE OF EDUCATION::BHUBANESWAR

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WORKSHOP FOR ELEMENTARY TEACHER EDUCATORS ON PREPARATION OF LOW COST TEACHING AIDS, AND TECHNOLOGICAL ADVANCEMENT FOR TEACHING DISABLED CHILDREN

Venue:- R.C.E., Bhubaneswar
Duration:-13 Dec. to 17 Dec.93
Programme Director:- Dr. S.K.Goel

Our country has witnessed phenomenal expansion by educational opportunities in the post-independent period. However, children with disabilities have not yet benefitted substantially. With the high magnitude of handicapped population, limited number of special schools, shortage of trained manpower, financial constraints, lack of resources, etc. some alternative strategy for education of children with disabilities needs to be developed. The concept of IED is one such alternative which is going to be very helpful in serving a large number of such children all over the country. The programme is gaining momentum in pursuance of NPE-POA, 1986 which envisages education of children with disabilities in common schools as far as possible. This policy has urged he need for stupendous developments in personnel, material, planning and management, etc. Placement of children with disabilities in the common schools demands many supportive services, one of the major items being the instructional material. It is true that most of the handicapped children can assimilate more than 80 percent of the regular classroom instruction when appropriate reading material is provided. Moreover, learning will become more interesting and enterprising when appropriate instructional strategies are adopted by the classroom teacher. Intensive efforts must be made to devise special teaching devices so that their learning ability can be improved. If the teacher is aware of the advantages of these devices, it may be beneficial to impart training to these children.

In order to attain these goals, this programme is being organized with the following objectives.

- To orient the teachers about the creative art activities for the disabled.
- To enable the teachers develop their resource rooms with necessary aids and equipments.
- To acquaint them with the new methodology for dealing with handicapped child in an integrated school.
- To prepare and utilize low-cost materials for teaching children with special needs.

It is proposed to cover five areas of disabilities VIZ, MR, LD, VI, HI, OH in this programme and preparation of teaching aids and technological advances in each area of disability will be discussed. Arrangements have also been made for presentation of Slides/Transparencies/ Audio & Video Cassettes. Demonstration of all the aids and appliances available with us will also be given. One session will be devoted to the evaluation of this programme and group discussion in order to get some feedback from the participants.

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BRIEF REPORT OF THE PROGRAMME ENTITLED "WORKSHOP FOR ELEMENTARY TEACHER EDUCATORS ON PREPARATION OF LOW COST TEACHING AIDS AND TECHNOLOGICAL ADVANCEMENT FOR TEACHING DISABLED CHILDREN FROM 13 Dec 93 to 17 Dec 93

The Programme started on 13 Dec. 93 in the conference Hall of Regional College of Education, Bhubaneswar. After welcoming the participants and resource persons, the Programme Director highlighted the following objectives of this programme.

- To orient the teachers about the creative art activities for the disabled.
- To enable the teachers develop their resource rooms with necessary aids and equipments.
- To acquaint them with the new methodology for dealing with handicapped child in an integrated school.
- To prepare and utilize low cost materials for teaching children with special needs.

Dr. S.T.V.G.Acharyulu, Dean and Head of Department (Education) delivered the inaugural address and explained the importance of preparation of low-cost teaching aids and technological advances in the field of special education. The programme continued for five days and all the five disability areas, viz, Mental Retardation, Visual Handicap, Hearing Disorders, Learning Disabilities, and Orthopaedic Disbilities were covered. In all 17 lecture-cum-demonstration classes were arranged during the programme by internal and external resource persons on all the disability areas. During these five days, one session was devoted to "Group Discussion-cum-Assignment Completion Work". Exercises from all the five disability areas were given to all the participants and the average response to these exercises was 85%. Practical demonstration was given to prepare low - cost teaching aids for the handicapped. Presentation of slides on "Creative Art Activities for the Children with Special Needs" prepared by NCERT, New Delhi was also arranged. Many transparencies on recent trends in special education, technological advances, learning disabilities, etc. prepared by Programme Director were also shown to the participants. Some computer games in the Computer Cell of the college were also arranged. Practical demonstration of Braille Reading and Writing with the help of Braille slate/stylus and Brailler, Arithmetic Calculations with the help of Abacus/Taylor Frame, Shorthand machine/Thermoform Machine, Games for Visually Handicapped (Chess Board, Playing Cards, Cricket Balls), O&M for VIC, Some other equipments like Audiometer, Speech Trainer, Hearing Aids, Orthopaedic canes etc. was also arranged. An exhibition covering all the disabilities was organized and the literature developed by RCEs, National Institues, etc was displayed for the benefit of participants. Many video films prepared by NCERT and National Institutes in the field of Special Education and Preparation of Low Cost Teaching Aids were shown.

On the last day in the Valedictory function, the Programme Director presented a brief report of the achievements of this 5 day Workshop and distributed the Certificates to the participants. I am grateful to Dr. S.K.Krishna Prasad, Supdt. for making it convenient to attend the Valedictory function.

The following five participants spoke in the Valedictory Fuction :

1. Dr. Onkar Nath Singh
2. Dr. Zafar Alam
3. Mr. D.N. Bhattacharya
4. Mr. Tapan Kumar Das
5. Mr. Brundaban Nayak.

All the participants expressed deep satisfaction with the smooth and successful organization of the programme. They expressed the usefulness of this programme and felt benefitted with the course content. They desired to have more workshops of this kind of longer duration in their own states. It was a great pleasure to see the enthusiasim and active participation of all the participants (list attached) from the eastern zone (6 from Orissa, 2 from Nagaland, 1 from Mizoram, 4 from Manipur and 17 from Bihar). This Workshop was planned for 30 participants and the response was 100 percent. It is hoped that the organization of such programmes from time to time will bear the fruits to implement the IED scheme with adequate resource rooms in the Eastern Zone of our Country under the dynamic leadership of Dr. K.C. Panda, Principal and Director of SCERTs.

I express my sincere and heartfelt gratitude to Prof. K.C. Panda, Principal; Prof. S.T.V.G.Acharyulu, Dean, all IRPs and ERPs (list attached), Mr. S.P.Mishra, Lecturer; Mr. B.B.Singh, APC and his staff (Extension Department) for organizing their help in organizing this programme successfully. It was not possible to include more papers in this report but, however, an attempt has been made to present the salient features through some of the papers, basic concepts, assignments, etc. included in this report. It was a pleasure to include an article sent by one of the participants Dr. Zafar Alam. It is hoped that this small document will prove useful to the participants.

Dr. S.K. GOEL
PROGRAMME DIRECTOR

REGIONAL COLLEGE OF EDUCATION::BHUBANESWAR

WORKSHOP FOR ELEMENTARY TEACHER EDUCATORS ON PREPARATION OF LOW COST TEACHING AIDS AND TECHNOLOGICAL ADVANCEMENT FOR TEACHING DISABLED CHILDREN FROM 13 DECEMBER,93 TO 17 DECEMBER,93

TIME TABLE

13.12.93	10.00 AM - 11.00 AM	Registration
	11.00 AM - 12.00	Inauguration
	12.00 Noon - 1.00 PM	Teaching Aids and Technological Advances in Special Education.
	1.00 PM - 2.00 PM	Lunch
	2.00 PM - 3.00 PM	Use of Brailler and drawing of geometrical figures.
	3.00 PM - 3.15 PM	Tea
	3.15 PM - 4.15 PM	Use of Computers in Special Education.
	4.15 PM - 5.15 PM	Aids and Appliances for HIC
14.12.93	10.00 AM - 11.00 AM	Teaching Aids for HIC
	11.00 AM - 11.15 AM	Tea
	11.15 AM - 12.15 PM	Aids and Appliances for OH
	12.15 PM - 1.15 PM	Aids & Appliances for HIC
	1.15 PM - 2.15 PM	Lunch
	2.15 PM - 3.15 PM	Abacus/devices for games & sports for VIC.
	3.15 PM - 3.30 PM	Tea
	3.30 PM - 5.00 PM	Instructional Materials for MR children - Teaching Devices.
15.12.93	10.00 AM - 11.00 AM	Special Techniques for Teaching HIC
	11.00 AM - 11.15 AM	Tea
	11.15 AM - 12.15 PM	Short Hand Machine/ Thermoform machine/O & M. for VIC
	12.15 PM - 1.15 PM	Cognitive Trg. for LD children
	1.15 PM - 2.00 PM	Lunch
	2.00 PM - 3.00 PM	Braille Kt/Taylor Frame
	3.00 PM - 3.15 PM	Tea
	3.15 PM - 5.15 PM	Audio/Video Ca settees presentation.
16.12.93	10.00 AM - 11.00 AM	Braille Kit/Taylor Frame
	11.00 AM - 11.15 AM	Tea
	11.15 AM - 12.15 PM	Slides Presentation
	12.15 PM - 1.15 PM	Computer games
	1.15 PM - 2.15 PM	Lunch
	2.15 PM - 5.00 PM	Video Programme

REGIONAL COLLEGE OF EDUCATION
BHUBANESWAR

LIST OF PARTICIPANTS OF THE WORKSHOP FOR ELEMENTARY TEACHER EDUCATORS ON PREPARATION OF LOW COST TEACHING AIDS & TECHNOLOGICAL ADVANCEMENT FOR TEACHING DISABLED CHILDREN HELD IN THE COLLEGE FROM 13.12.93 TO 17.12.93

Sri Upendra Kumar Singh
P.T.E.College,
Barhait,
SAHEBGANJ (Bihar)

Ms. Kanti Lakra,
P.T.E. College,
DALTONGANJ (Bihar).

Sri Vijay Kumar
P.T.E. College,
Pindrajora,
BOKARO (Dhanbad)
PIN - 827 013.

Sri Deb Narayan Bhattacharya
Patna Collegiate School,
Post. Bankipore,
PATNA - 800 004.

Sri Shaligram Rana
D.I.E.T.,
PALIA (Bihar).

Dr. Onkarnath Singh
Lecturer
B.E.P. Town School,
Sasaram,
ROHTAS (Bihar).

Dr. Zafar Alam
Headmaster
Govt. M.School,Shrikhinda,
Nokha, Rohtas (Bihar).

Sri Jai Prakash Singh,
Asst. Teacher,
High School, Reria,
Rohtas (Bihar).

Sri Chandra Deo Pandey
Headmaster
Rajakiya Middle School,Kila,
Sasaram Rohtas (Bihar).

Sri Dwarikanath Singh,
Asst. Teacher
S.S.Govt. Inter College,
Takiya (Rohtas)
Sasaram (Bihar).

Md. Kamal,
R.T.I.E.D.,
Patna Collegiate School,
Patna (Bihar)

12. Sri Arun Kumar,
R.T.I.E.D.
Patna Collegiate School,
PATNA (Bihar).

13. Zeenat Ara
S.C.E.R.T.
Bihar.

14. Sri Raghunandan Kumar
Sir G.D.Patliputra
High School,
PATNA (Bihar).

15. Sri Laldeo Sah,
Zilla School,
RANCHI (Bihar).

16. Kiran Sinha,
R.T.I.E.D.
Bankipur Govt.Inter
School, PATNA-1.

17. Sri Pramod Kumar Patel,
Teacher Educator,
D.I.E.T.,Kalahandi
BHAWANIPATNA (Orissa).

18. Sri Tapan Kumar Das
Teacher Educator,
D.I.E.T.,Kalahandi
BHAWANIPATNA (Orissa).

19. Sri Brundaban Nayak
Teacher Educator
D.I.E.T.
Jeypore (Orissa).

20. Sri Gopal Krishna
Bebortha
Govt.Secondary Training
School,
At/Po/Dist. Nowrangpur
ORISSA

21. Sri Arjun Sahoo
Asst. Teacher,
S.T.School,Kuarmunda,
Dist. Sundargarh(Orissa)

22. Sri Khageswar Nayak
Teacher Educator
D.I.E.T., Tikabali
Dist. Phulbani(Orissa0

P.T.O.

23. Sri Hrushikesh Behura,
Teacher Educator,
D.I.E.T.,Baripada,
Dist.Mayurbhanj(Orissa).

24. Imlila Longchar,
Lecturer
D.I.E.T., SCERT
KOHIMA (Nagaland)

25. Longtichang Tzudir,
Lecturer
D.I.E.T., SCERT,
KOHIMA (Nagaland)

26. G.Guneswar Sharma,
Special Teacher (IED)
S.C.E.R.T.,
Manipur.

27. M.Kanun Kumar Singh
Special Teacher (IED)
S.C.E.R.T.,
Manipur.

28. Th. Simi Devi
Special Teacher (IED)
S.C.E.R.T.,
Manipur,

29. H. Jagadhatri Devi
Special Teacher (IED)
S.C.E.R.T.,
Manipur.

30. R.R. Chauhan,
Science Consultant
S.C.E.R.T.,
AIZAWL (Mizoram)

INTERNAL RESOURCE PERSONS

1. Dr. S.K. Goel,
Reader in Special Education
& Programme Director.

2. Dr.(Ms) T. Dutta,
Sr. Lecturer in Education.

3. Sri P. Sahu,
Lecturer in Special Education

4. Sri S.P. Mishra,
Lecturer in Educational Tech.

EXTERNAL RESOURCE PERSONS

1. Dr. U.N. Dash,
Reader
Utkal University,Bhubaneswar.

2. Mr. M.N.Mohanty,
Principal,
BB School for Blind
Bhubaneswar.

3. Mrs. Sandhya Rani
C.I.M.H., A/3 Nayapalli,
Survey of India Quarters
Bhubaneswar.

4. Dr. S.K.Krishna Prasad,
V.R.C.H., SIRD, Unit-8
Bhubaneswar - 751 012.

5. Mr. S.C. Das
S.C.E.R.T.,
Bhubaneswar.

6. Mr. Arun Barik
T.C.T.D., SIRD, Unit-8
Bhubaneswar - 751 012.

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17.12.93	9.00 AM - 10.00 AM	Educating OH & Architectural Barrier.
	10.00 AM - 12.00 Noon	Preparation of Teaching Aids.
	12.00 Noon - 1.45 PM	Group Discussion/ Assignments
	1.45 PM - 2.15 PM	Lunch
	2.15 PM - 3.30 PM	Validictory Function
	3.30 PM - 5.00 PM	Distribution of Certificates/TA/DA etc.

(Dr. S.K.Goel)
Programme Director

REGIONAL COLLEGE OF EDUCATION
BHUBANESWAR

Dr. S.K. Goel
Reader in Special Education
and Programme Director

Bhubaneswar
Date: 17/2/14

Dear Brother/Sister,

Thank you very much for your participation in the following programme organized by our college.

Workshop for Elementary Teacher Educators
On Preparation of Low Cost Teaching Aids
And Technological Advancement For Teaching
Disabled Children.

I am glad to send herewith the report of the programme for your kind perusal and retention. Hope the sweet memories of this programme will be cherished for ever and there will be opportunities for us to meet in future and share our ideas. I look forward to your whole-hearted support, fullest cooperation and suggestions for strengthening the activities of the Special Education Cell of this College in serving the Disabled People of our country.

Kindly acknowledge receipt of this report.

With best wishes and warm regards,

Yours sincerely,

(S.K.Goel)

Encl: As above

To

EDUCATION OF CHILDREN WITH DISABILITIES

Dr. SUSHIL KUMAR GOEL
Reader in Special Education
Regional College of Education
(NCERT)
Bhubaneswar (Orissa) 751 007.

BACK GROUND:

You might have come across some children with special needs in your classroom. These children have learning problems and need a little extra help from you. Sometimes it may be easy to understand their problem but sometimes it may not be possible and learning problems may persist despite your special help. You get an opportunity to observe all the children in the initial grades in both academic and non-academic situations. These observations can facilitate the early identification of disabled children. The teachers can perform this function successfully if they are aware of the specific manifestations of the disability in personal appearance and behaviour. These children have learning problems because of factors either inherent in themselves or in their homes or in their schools.

The degrees of special needs arising out of a disability, alongwith educational implications, have been worked out in this module. The learning activities involve (a) individual activities of doing paper-pencil exercises and reading; (b) group work; and (c) discussion in plenary sessions. You will enjoy doing these exercises and many guidelines given in this module regarding simple identification procedures for various disabilities and their educational implications will ease your problems to a considerable extent.

OBJECTIVES:

After completing the module, you are expected to :

1. State the various learning problems of the disabled children and classify them under various categories.
2. describe ambulation disabilities (that are cerebral and non-cerebral), special health problems, convulsive disorders, sensori-motor disabilities, mental retardation and learning disabilities,
3. identify the children with disabilities at initial level and refer them to specialised agencies for detailed investigation and assessment,

4. suggest the points of action for educating children with disabilities in the least restrictive environment,
5. list the agencies and organizations that teachers may contact for assistance in meeting the educational needs of children with learning problems identified above; and
6. suggest follow-up action that you propose to take to meet the educational needs of such children in your classroom.

LEARNING ACTIVITIES:

During your teaching career you must have come across some children who have learning problems and do not perform well as expected by you inspite of your best efforts and special attention. Your colleagues must have also experienced the same problems with such children and might have possibly shared their views during some formal or informal discussion. Why not think them over and list all the learning problems of such children on the basis of your experience. Also make an effort to find out the possible causes of such learning problems. You might have spoken to their parents, siblings, peers, other teachers and also directly to the children and this may help you to find out the possible causes of learning problems. You may further find out the causes and may be classified into various categories i.e. Home, School, Child, or any other. Let us do some of these activities.

Activity Sheet No. 1 : Learning Problems of the Children in the classroom.

I find the following learning problems of the children in my classroom.

1. ____________________
2. ____________________
3. ____________________
4. ____________________

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'

'

10. ____________________

Activity Sheet No. 2 : Possible causes of Learning Problems.

I feel that the learning problems of my children are due to following reasons.

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________

10. ______________________________

Activity Sheet No. 3: Classification of Learning Problems:

Category	Learning Problems Classified Under this Category:
1. Child	1. ______________________________ 2. ______________________________ 3. ______________________________ 4. ______________________________ 10. ______________________________
2. School	1. ______________________________ 2. ______________________________ 3 ______________________________ 10. ______________________________

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3. Home :

1. ____________________
2. ____________________
3. ____________________

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10. ____________________

4. Any Other:

1. ____________________
2. ____________________
3. ____________________

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10. ____________________

The unfavourable attitude of parents and siblings towards the child, the broken family, the marital disharmony between the parents, frequent transfer of father leading to adjustment problems to the child in different schools could be some of the factors related to learning environment at home. The biased attitude of the teacher, inadequate instruction and facilities could refer to the learning environment of the school. Any hearing/visual/special health/lowered intellectual level, etc. could be the problems of the child. We as teachers cannot afford to neglect these children and suitable measures are taken, many new problems will crop up and the learning problems will multiply. Such situations are likely to cause frustration due to constant failure and as a result, the children will ultimately drop out and develop behaviour problems which may be detrimental to their will-being.

The focus of this module is to deal with children with disabilities in regular schools.

You must have made various attempts to deal with the learning problems of your children. You must have made certain behavioural observations and used some adaptation/adjustment in the curriculum and modifications in your teaching methods. You must have supplemented your verbal explanations by using various instructional devices/audio-visual aids and showing practical demonstrations.

You may list the action taken by you so far and also think what further you can do about them.

Activity Sheet No. 4: Teacher's Approach to deal with Children with Disability.

Disability	Action taken so far	Further Action Required
	1.	1.
________	2.	2.
	3.	3.
________	'	'
	'	'
________	'	'
	'	'
________	'	'
	'	'
________	10.	10.

Once these children with disabilities are observed consistently in the classroom, they may be referred to specialized agencies. They may require some medical help and correction to overcome the disability e.g. they may need hearing aid/lens/magnifying lens/crutches/wheel chair/writing aid, etc. The curative and corrective measures are accompanied by adjustment in curriculum and instruction with the objective of making the curriculum accessible to such children. Each area of disability has been discussed briefly within this specific framework and some important guidelines for identification of disability and education of children have been highlighted.

CHILDREN WITH LOCOMOTOR DISABILITY

Children with physical disabilities are those whose physical or health problems result in an impairment of normal interaction with society to the extent that specialized services and programmes are required for them. They may have locomotor problems i.e. problems related to bones, joints and muscles. As a result, the mobility of limbs and extremities gets restricted. They may find difficulty in moving around

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and some other problems in their home and school environment but they are capable of leaving like other children. For example, a child having certain deformity in fingers may not be able to have a proper grip of the pencil and experience a problem in writing. Some children having postural defects may have certain difficulties in performing some learning activities due to fatigue. Some normal children may also make fun of these disabled children due to lack of awareness and the disabled children may therefore face adjustment problems.

Like children with other disabilities, the physically disabled are typically grouped in categories. We will discuss children who are grouped according to their abilities to function in a particular area and children who are grouped according to their medical diagnosis. The functional categories are ambulation, which refers to the child's ability to move from place to place, and vitality which refers to the child's health and ability to sustain life. In the medical category, we will discuss convulsive disorders. We will also discuss architectural barriers, and devices designed to assist the physically disabled.

Terminology Based on Anatomy.

Areas of the body are frequently designated with prefixes, whereas suffixes are used to designate conditions of the body. For example, the prefix "hemi" refers to one sideof the body, whereas the suffix "plegia" refers to paralysis or the inability to move. Thus the term "hemiplegia" refers to the paralysis of one side of the body.

Other common terms are listed here :

Term	Body Area Involved
Monoplegia	One limb.
Hemiplegia	Both limbs on the same side of the body.
Paraplegia	The lower limbs.
Diplegia	All four limbs, but the lower limbs more seriously than the lower.
Triplegia	Three limbs.
Quadriplegia	All four limbs.
Double Hemiplegia	Upper limbs more seriously affected then the lower.

Anterior	Front.
posterior	Back.
Medial	Nearest the middle.
Lateral	Farthest from the middle.
Superior	Nearer to the head.
Inferior	Farther from the head.

There are a number of other terms used to describe the physically disabled. The terms "proximodistal" and "Cephalocaudal" are used to describe the growth of children. The term proximodistal means that the development proceeds in the outward direction. That is, the central parts of the body mature earlier than the peripheral parts. For example, the trunk and shoulders develop first and then the arms and fingers begin their real worth. The term "Cephalocaudal" means head-to-foot direction of development. The head starts growing at a very rapid rate almost immediately after conception. A fetus's head is well developed before his legs assume their final form; arm buds appear before leg buds. This progressive differential growth - first the head, then the trunk, then the legs - has been designated by the term Cephalocaudal (head-to-foot).

AMBULATION DISABILITIES:

Physical disabilities that prevent a child from entering a building, travelling easily from room to room, using toilet facilities, moving from one floor to another, or travelling in a crowded halfway all cause serious problems. It is this type of impairment that has restricted the physically disabled to special schools and modified self-contained classrooms. We will briefly describe the ambulation disabilities which are cerebral in origin and which are caused by noncerebral factors.

Cerebral Palsy:

Cerbral Palsy (C.P.) is a ambulation disability that is cerebral in origin. C.P. is caused by damage to the brain. It is characterised by impaired motor coordination. It is a nonprogressive disorder that affects gross and fine motor coordination. The other disorders often associated with CP are communication disorders, sensory disorders, convulsive disorders, intellectual deficits, etc. There are several types of cerebral palsy including spastic, athetoid, ataxia, rigidity, tremor, and mixed.

CP can cause a wide variety of problems, some very serious, some relatively easy to adapt to. Those who suffer from it can be expected to attend school in regular classrooms, in classes for the orthopaedically handicapped, or in programmes for the severely or multiply handicapped. These children may need physical, occupational, and speech therapy. Some will need minimal extra attention, whereas others will need a great deal of assistance to develop to their full potential.

AMBULATION DISABILITIES (Cased by Noncerebral factors)

The other disorders that affect ambulation are muscular dystrophy, spinal muscular atrophy, poliomyelities, arthogryphosis, arthrities, osteogenesis imperfecta, spinal cord injuries and other musculoskeletal disorders. Muscular dystrophy is a progressive weakening and degeneration of the voluntary muscles. Spinal muscular atrophy affects the spinal cord and results in progressive degeneration of the motor nerve cells. Poliomyelitis (infantile paralysis) is a viral infection that affects or destroys the cells in the spinal cord. When these nerve cells are destroyed, the muscles that they serve eventually die or become paralyzed. The paralysis may affect the entire body or just parts of the entire body. Many people with polio are bedridden, confined to wheel chairs, or dependent on braces and crutches for ambulation. Spina bifida is a congenital defect caused by the failure of the bones of the spine to grow together completely. Osteogenesis imperfecta is also known as brittle bone disease. Arthrogryphosis is a congenital disorder characterized by stiff joints and weak muscles. The first signs of the disease Arthritis are general fatigue, stiffness and adhing of the joints as they swell and become tender. The five common types of arthritis are : rheumatoid, osteoarthritis, ankylosing spondylitis, rheumatic fever and gout.

A problem in one part of the body frequently causes problems in another part. Children who have spina bifida, muscular disorders, or other disorders, frequently have back problems as well. Muscles that pull too hard or that are unequally balanced can cause such disorders as scoliosis, lordosis, and kyphosis. Inadequate muscle tension sometimes results in the complete collapse of the skeletal system. A club foot is a disorder that can appear by itself or in conjuction with another problem. Children with this disorder are born with one or both feet turned down and in. Amputation is another important disability. It can be partial or complete.

Most ampuputations are necessary because of accidents but some are required by life-threatening physiological disorders and diseases. Limbs may also be missing as the result of disruptions in the early fetal development of the limbs. This sometimes occurs randomly but it can be caused by drugs such as thalidomide if taken by the pregnant Woman particularly during the first trimester of pregnancy.

The children with locomotor disabilities can be easily identified with the help of the following checklist.

Identification Checklist for Orthopaedically Disabled Children

1. Observable deformity in fingers, legs, hands, waist (spine), neck, etc.
2. Frequently complains of pains in the joints or shows signs of pain during physical exercise.
3. Walks awkwardly with jerks/limp.
4. Has amputated limbs.
5. Falls frequently.
6. Has difficulty in sitting, standing and walking.
7. Has difficulty to have a proper grip of the pencil.
8. Involuntary movements of limbs.
9. Poor motor control or coordination. The child is unable to coordinate two or more muscle groups for performing any task.
10. Moves in a shaky fashion.
11. Has difficulty in holding objects, picking up and putting them on the table or on the ground.

The teacher must assist the parents of such children to procure aids for mobility and proper functioning through District Rehabilition Centres, Vocational Rehabilitation Centres, etc.

DISABILITIES THAT AFFECT VITALITY.

Some of the disabilities that can affect the vitality of children are congenital heart defects, cystic fibrosis, diabetes and asthma. Children with disabilities that affect vitality are frequently placed in special classes or programmes. Although all these disorders are life - threatening, some are more dangerous than others. All children with these types of disorders will need special assistance from a primary care worker or teacher, and special educational, social, and vocational training as well.

Children with mild health problems come under the educable IED group. Their health problems do not interfere with educational planning. But precautions need to be taken in terms of getting adequate medical check ups and support. There are children with severe health problems who cannot be integrated in regular schools. The severity of their health problems interferes with educational planning. Such children require constant medical attention and may not be able to participate in the academic and non-academic activities of general classrooms. These children require rest very often as they get severely tired after 10-15 minutes of studies. Such children need to be educated either in special classes in regular schools or be given homebound/hospital bound instruction.

Children with special health problems can be identified by the teacher with the help of following check list.

Children with Special Health Problems :Identification Checklist.

1. Shortness of breath.
2. Blue appearance of skin.
3. Low tolerance for exercise.
4. Frequent coughing.
5. Have an increased appetite.
6. Have low physical stamina and gets easily tired.
7. Takes snacks, sweet biscuits during class time.
8. Excessively restless.
9. Extremely slow and inactive.
10. Complains of frequent pains in arms, legs, joints, chest, etc.
11. Extremely inattentive.
12. Has slight temperature most of the time.
13. Faints frequently.
14. Gets irritated, anger very quickly.
15. Frequently throws temper-tantrums.

16. Exhibits destructive and aggressive tendencies without proper reason.
17. Frequent urination, abnormal thirst, extreme hunger, rapid loss of weight, sleepiness, weakness.
18. Frequent skin infections such as itching/boils, etc.
19. Breathes noisily and perspires often.
20. Allergic to dust and feels difficulty in breathing.

CONVULSIVE DISORDERS:

Epilepsy and seizures are categorised under the general heading of convulsive disorders. Epilepsy is caused by uncontrolled electrical discharges in the brain and can usually be controlled with medication. Epilepsy is treated as a special health problem. The three primary types of seizures that result from epilepsy are grand mal, petit mal, and psychomotor seizures.

You may protect the child by cradling it in your hands and do not restrain child movement, however. The teacher may notice the following symptoms of this problem :

1. The child shakes violently as if in the grip of hysteria.
2. The child becomes unconscious.
3. He falls and moves arms and legs violently.
4. He may become pale and there is constant recurrence of fits.
5. He may unnecessarily go on rubbing of arms and body parts.
6. There is twitching of eyelids.
7. He starts taking off his clothes.

EDUCATIONAL IMPLICATIONS:

Many types of assistive and adaptive equipment have been developed to help physically disabled children in their day-to-day existence, travel, adaptive to their environment, and communication. Prosthetic devices such as artificial arms and legs are used to replace missing body parts. Orthotic devices are attachments, such as a leg brace or a splint that assist a body function.

Depending upon the severity of the child's physical disability/special health problem and the extent to which he requires special attention, the child might be placed in any of the educational environment which is least restrictive. The great majority of the physically disabled children can be educated in regular classrooms with the use of assitive equipment and special teaching aids. Before recommending the placement of orthopaedically disabled children in the regular classroom, it is necessary to consider thattheir medical, travel, transfer and lifting, self-care, and positioning needs can all be appropriately met in the regular classroom.

The first and foremost thing is that a teacher should create an atmosphere of acceptance ofa disabled child in the classroom. He should be involved in all learning activities as an equal partner with his peers. The teacher should encourage peer interaction on the basis of mutual respect, whole-hearted support and cooperation. This can be facilitated by telling the normal children the implications of physical disability.

Necessary seating arrangements forthe disabled children in the front side will facilitate free movement forother children in the classroom. Ramping arrangements may also be necessary for children with wheel chairs. They should be given adequate opportunities for participation in games, physical and recreational activities at their level of functioning. Efforts may be made to plan such activities for normal and disabled children as a joint venture.

In the classroom you must have experienced of dealing with a child with locomotor disability and adjusted your teaching and classroom arrangement for children with problems of (a) movement from one place to another, (b) posture arising out of muscle tension, and (c) muscle rigidity interfering with their academic learning/skills.

CHILDREN WITH SPEECH AND HEARING DISORDERS

Communication is disordered when it deviates from accepted norms such that it calls attention to itself, interferes with the message, or distress the speaker or listener. Speech results from many organs of the body working cooperatively to produce sound. The three major types of sounds in our language are vowels, diphthongs, and consonants. Speech and language are developmental processes acquired over time. Language disorders the most complex and most serious of all communication problems. Most speech disorders involve problems with articulation, voice or fluency. Speech language pathologists are the professionals to deal with communication disorders. The classroom teacher has an important role in the early identification of communication disorders. The following checklist summarizes behaviours and characteristics of children with speech disorders:

a) Does the child have any observable deformity of the speech organs ?

b) Does the child make frequent natural breaks while speaking words and phrases ?

c) Does the child frequently mispronounce despite corrective efforts made by the teacher ?

d) Does the child hesitate in participating in oral group activities ?

Gains made in therapy sessions must be reinforced in the home and classroom for speech therapy to be effective. A child listens a lot before he can speak well. Our ears are the doorways to the world of communication. It is the listening child who learns to say his first words by the age of 12 months. The professionals who evaluate hearing by means of audiometric testing are called audiologists. Hearing loss can affect speech and language development, and educational, vocational, social, and emotional adjustment. Depending upon whether hearing loss is mild, moderate, severe or profound, the hearing aid is to be fitted. Hearing aids make sound louder but do not make sounds clearer. Auditory training is important for listening. For educational purposes, children with hearing disorders are classified as either hard of hearing or deaf. The philosophy of total communication makes use of both oral and manual procedures to teach deaf children.

Regular class teachers should be able to recognize signs that may indicate hearing disorders so that they can refer children for hearing evaluations. They can help keep children with hearing disorders in the regular classroom in many ways. A classroom teacher should watch for the following signs of possible hearing loss.

IDENTIFICATION CHECKLIST:

1. Does your child have problems paying attention in school ?
2. Does your child favour one ear for listening purposes ?
3. Does he have problems to hear when you speak to him from behind ?

4. Do you think your child can hear, but only when he wants to hear ?

5. Do you think your child speaks too loudly or too softly ?

6. Does he exhibit voice problem and mispronunciation ?

7. Does he tune the Radio/T.V. too loud ?

8. Does your child answer questions irrelevantly ?

9. Does your child keep away from age mates ?

10. Is your child unable to respond when you call from the other room ?

11. Does your child understand only after few repetitions ?

12. Does the child focus on the speaker's face while listening to and understanding speech ?

13. Does the child ask for help from fellow students in taking notes when the teacher gives verbal explanation of the lessons in the classroom ?

14. Does the child complain of frequent earaches or ear discharge ?

15. Does the child scratch his ear frequently ?

16. Does the child have any observable deformity of the ear ?

If one or more of these symptoms are present in your child, you need to observe the child and see if the behaviour is consistent in similar situations. If the behaviour is found consistent, your child needs professional help from an audiologist.

EDUCATIONAL IMPLICATIONS:

The treatment and educational requirements of a school - age child will depend on the nature and severity of the child's hearing loss. There are many children with mild to moderate hearing loss in regular schools. The following suggestions may help the teacher work with them effectively.

1. If the teacher generally teaches from the front of the room, the hard-of-hearing child should be seated in the front, preferably slightly off center towards the windows. This allows the child to hear better and read lips more effectively. Light should be directed towards the teacher's face and away from the speech reader's eyes.

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2. If the hearing impairment involves only one ear, or if the impairment is greater in one ear than the other, the child should be seated in the front corner seat such that his better ear is toward the teacher.
3. The child should be encouraged to watch the face of the teacher whenever she is talking to the child. The teacher should speak at the speech reader's eye level whenever possible.
4. The teacher should pay attention to the posture of the hearing impaired child's head. The habits ofextending the head or twisting the neck to hear better can become firmly fixed.
5. The teacher should not speak loudly or use exaggerated lip movements when speaking to the hard of hearing child.
6. The hearing impaired child should be encouraged to turn around to watch the faces of children who are reciting.
7. An interest in music and participation in vocal music should be encouraged.
8. The teacher should be able to assist the child who wears a hearing aid in the classroom.
9. The hard-of-hearing child should participate actively in all plays and other activities which involve speech.
10. Teachers should watch carefully for illnesses in hearing impaired children. Colds, influenza, throat and nose infections, tonsilitis, and other ailments should be treated as soon as possible.

Under the centrally sponsored scheme on Integrated Education of Disabled Children revised 1987, there is more emphasis on the integration of mild and moderate cases of hearing impaired. The integration of severe and profound cases has been recommended after preparation in preacademic skills.

CHILDREN WITH VISUAL IMPAIRMENT:

The basic function of eye is to collect visual information from the environment and transmit it to the brain. We collect nearly 80-90% of information through our eyes. This input is denied to the visually impaired. Visually impaired children (VIC) are classified as either blind or partially sighted. The blind children cannot read the usual text and need braille, which is read through touch. These children can be easily identified. The vision of some of the partially sighted children can be corrected through a lens, some require magnifying glasses to read and some can read only large print of 18 point and above. Some children have a restricted field of vision.

Most visually impaired children are not totally blind. Approximately two-thirds of all visually impaired children have some remaining vision. A majority of cases of blindness are either preventable or curable.

Much use of blackboard and reading from the books is required for academic learning. Visual impairment leads to several learning problems. Such children can be easily identified by the teacher with the help of the following checklist.

Identification Checklist for the Visually Impaired:

1. Observable deformity in the eye(s).
2. Frequently reddening of eyes.
3. Rubs eyes excessively.
4. Holds objects and books close to his eyes.
5. Covers one eye and tilts the head forward.
6. Blinks eyes frequently.
7. Squints eyes.
8. Asks other children for help while taking notes from the balckboard.
9. Complains about headache following close eye work.
10. Watery eyes.
11. Pupils of the eyes are of different sizes.
12. Seems very sensitive to light.
13. Becomes inattentive .
14. Body becomes tense while trying to distinguish the distance of objects.
15. Takes false steps while walking.

If a child displays some of this behaviour, the teacher may refer him to PHC or hospital for eye check-up and medical treatment.

EDUCATIONAL IMPLICATIONS:

Visually Impaired Children tend to lag behind their seeing peers in school achievement. Once a child has been placed in the most suitable educational environment, the educator must consider the curriculum that will best meet his/her needs.

Children with visual problems are usually taught the same sequence of subjects as children with normal vision because they need to master the same basic skills. However, unlike sighted children they will need to be taught special skills in addition such as Orientation and Mobility, Daily Living Skills, Braille Reading and Writing, etc. Although the responsibility for implementing the total curriculum plan lies with the regular teacher, the assistance of a specially trained teacher will be necessary to teach these special skills to VIC. The media through which VIC obtain information are tactile, auditory, and visual.

Those involved in educational planning should remain flexible in their approach to placement. It is important to remember that the most appropriate, least restrictive environment for VIC is the one in which they wouldnormally be enrolled if they were not visually impaired. They should be educated to the greatest extent possible with sighted children. In considering basic instructional methods for visually impaired children, it is important to remember that many of the techniques and strategies that are effective with seeing children are also appropriate for the visually impaired. VIC do have some unique instructional needs and will require help from specially trained teachers of the visually impaired in some academic areas.

Here are some guidelines for the teacher to help VIC in integrated setting.

1. Make the VIC seated in front so that they may be able to read from the blackboard without much difficulty.
2. He should write on the blackboard with bold and clear letters and speak loudly whatever he writes.
3. He should supply books with large prints (18 points or more) to cater to the needs of VIC.
4. He should supply hand lens, magnifying glasses, etc. from DRCs/hospitals for children whose correction is beyond the spectacle lens.

5. VIC may be given training in listening with comprehension.
6. Provide opportunities for participation in physical education games.
7. Give more auditory and tacticle aids to compensate for visual loss.
8. Arrange to provide audio-cassettes for VIC from SIE/SCERT/CIET/NCERT/NIVH, etc.
9. Provide more verbal cues while explaining the concept in the class.
10. Provide compensatory aids like cane for mobility, braille slate and stylus for learning to read and write braille, abacus to learn numerical concepts and brailler to cope up with speed of taking dictation in classroom.

CHILDREN WITH LOW MENTAL ABILITY:

Mental Retardation is impaired mental ability. To be diagnosed as mentally retarded, a person must be significantly subaverage in both intelligence and adaptive behaviour. A retarded child learns more slowly; at maturity his capacity to understand will be less than normal. He finds difficulty in learning, social adjustment and economic productivity.

The classification system based on severity of systems, which identifies children as mildly retarded (Educable Mentally Retarded), moderately retarded (Trainable Mentally Retarded), and severely/profoundly retarded (Custodial Mentally Retatded), is the system of greatest utility. The performance of mentally retarded children is affected in the class by their delayed development. The observable behaviours that will help the teacher in identifying such children are given in the following checklist.

Identification Checklist for the Mentally Retarded :

1. Consistent low academic ahievement.
2. Has short attention span.
3. Has a poor self-image.
4. Lacks self-confidence.
5. Has restricted communication.
6. Often inattentive and easily distracted.
7. Seeks immediate reward.

8. Has poor muscular coordination.
9. Seeks repetition and practice.
10. Displays fear of failure.
11. Shows excessive reliance on presentation of concrete objects.
12. Has a problem in understanding instructions/abstract things.
13. Does not take initiative in group activities.
14. Faces difficulty in doing things for himself.

Educational Implications:

It is best to regard retarded people as "developing individuals" who are capable of growth and development that can lead to favourable changes in their behaviour. With early and proper teaching, with suitable schools and vocational training; the mildly retarded, who constitute 75 per cent of the retarded population, can learn to be fairly self-supporting adults. These EMR children with good adaptive behaviour skills can often be successfully integrated into regular classes. TMR children are usually educated in special classes and can only be integrated in non-academic areas with adequate preparation. They can be trained in vocational areas and daily living skills. The retarded benefit from all types of attention and training. Even the S/PR can improve. The CMR cases need help in developing daily living skills and can be educated in special institutions. They cannot be integrated due to poor adaptive behaviour.

The following guidelines for adaptation of instructional material and methodology for the EMR may be useful for the teacher.

1. Provide concrete experiences for these children.
2. Provide direct experiences of the environment by field trips.
3. Provide more repetition and practice.
4. Present the learning task in small steps.
5. Draw their attention to important points of the learning task.
6. Ask simple questions to give them a sense of accomplishment.

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7. Provide immediate reward as and when the child gives correct response.
8. Provide training in communication skills through practice in social situations.
9. Arrange situations so that they may participate alongwith normal peers.
10. Transact the curriculum through simple and interesting experiences.
11. Ensure mastery of basic skills in the three Rs.
12. Organize learning activities through games, physical activities and music which form a permanent impression on their minds.
13. Arrange activities requiring eye-hand coordination.
14. Arrange activities which help in developing sound discrimination.
15. Utilize advantageously a situation chosen by the child himself for learning a particular skill.
16. Provide all necessary aids and supportive materials to learn a concept adequately.

CHILDREN WITH LEARNING DISABILITIES:

Learning Disabled (LD) have difficulties in learning to read, write, speak, comprehend, do arithmetic, spell the words, etc. The basic problem in learning - disabled children is an incapacity to learn through normal and conventional channels. Such children are said to have a learning disability which arises out of the problems in psychological processes like perception and memory.

From a psychometric standpoint, a learning disability can be operationally defined as a significant discrepancy between a child's actual level of achievement and the achievement expected of a child at his/her chronological age. The causes of learning disabilities are very poorly understood, but they could include such disparate factors as maldevelopment of the brain and poor teaching. The main characteristics of LD Children are :

1. Attention difficulty.
2. Perceptual problems.
3. Memory problems.

4. Language deficits.
5. Poor motivation/attitude.
6. Poor sound/symbol association.
7. Transfer difficulties.

In order to be called a "characteristic" difficulties that children with learning disabilities have must be.

(a) Observed consistently over time,
(b) resistant to simple remedial teaching methods,
(c) accompanied by a significant gap between achievement and ability.

Identification Checklist for the Learning Disabled:

1. Has difficulty in telling the time, remembering the order of days, months and mathematical tables.
2. Is always untidy and late in submitting homework any coming to class.
3. Is so excited that he is unable to complete and task.
4. Finds it difficult to organize his work, uses trial and error approach, logical and sequential approach missing.
5. Seems dull and slow in responding to others.
6. Gets easily distracted even by slight disturbance.
7. Cannot correctly recall oral instructions when asked to repeat them.
8. Confuses between left and right.
9. Reads words backwards, puts letters in wrong order, shortens words, misreads words, omits letters, adds letters, etc.
10. Difficulty in academic subjects, difficulty may be only in one subject or a combination of subjects.

EDUCATIONAL IMPLICATIONS:

Learning disabilities and behaviour disorders may occur in part because our schools are unable to provide enough high-quality individual instruction. The regular classroom teacher should become skilled through inservice training in managing learning disabilities within the mainstream of the school.

It is very difficult to identify the children with a mild degree of learning disability at pre-school level. They can be identified early if the parents and teachers plan their instructional material systematically from the very beginning. The guidelines given below will help the teacher to adapt instructional material and methodology to the needs of these children.

1. For correcting learning disabilities the child should be given exercises to identify a particular letter or number which is difficult for him to recognize, write or speak.
2. Letters or words which resemble each other, either visually or auditorily, should not be taught together.
3. Sensory experiences should be provided to copy letters correctly and to verbalize the differences. For example, saw and was; no and on.
4. Learning tasks should be divided into small groups so that the child feels that he has mastered the task.
5. The initial part of the remedial session should involve activities on which the child can achieve 80-90% success. A sense of success will act as a motivator.
6. Encourage the child to perceive the words as a whole rather than through identification of individual letters.
7. Ensure that the child is continually busy and interested in the task during the teaching session.

AN OVERVIEW:

There are children with some impairment who can be educated in general schools with the existing facilities by general teachers without any formal preparation. There are children with certain impairments who can be educated in general schools with some preparation and slight modifications/adjustments/ adaptations in teaching methods and materials. There are also a limited number of children with disabilities, who will require comparative prolonged formal preparation before they can be educated in general schools.

Children with different types and levels of disability will require educational provision matched with their needs. The educational provision may be considered on the basis of the extent of their participation in educational activities in common with other children. Targets of Universalization of Primary Education (UPE) can be achieved only through integrated education. Integrated Education is not an additional burden. Planned integrated education helps in universal enrolment and retention. Children with mild and moderate disabilities can be integrated in general schools. Adequate arrangements are to be made to give vocational training to the disabled. Teacher training programmes need to be reoriented in particular for teachers of primary classes, to deal with the special difficulties of handicapped children. Teachers should keep in touch with developments in the education of thedisabled. Parents and the society need yourhelp in developing disabled children as a human resource just like other children.

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STATEGIES INVOLVED IN THE EFFECTIVE PLANNING AND UTILIZATION OF LOW COST TEACHING AIDS

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Introduction:

Education is being unfairly and unevenly made available to the entire population, particularly the children with special needs. Education involves the transfer of communication of information/ideas/knowledge/ ideas from one point (the source) to another (the receiver). Until now this process was largely dependent on the spoken words or verbal method (through the medium of the teacher). But today the sphere of education has gone through a revolutionary period of change. The present trend of education is towards the'seeing and doing' type of schools, where concrete experiences are the basis of all effective learning. In these schools, the teacher with improved tools of teaching has become a better teacher, more effective active and efficient. Utilization of such resources has become all the more important, particularly in view of information explosion these days.

EDUCATIONAL SCENARIO OF RURAL-CHALLENGES & PROMISES

Out of 6 lakhs primary schools in the country, 75% of the schools are situated in the villages which covers 80% of the school going population of rural areas. These rural schools suffers badly for want of adequate funds to procure the equipments and teaching aids available commercially. Low cost teaching aids with simple materials available in the immediate school environment, by involving the rural artisans, if need be, are relevant to make learning effective. In a developing country like India where rich art and craft tradition co-exist along with enormous diversity of language and culture, it becomes imperative to view this trend with restraint.

The funds, the management and co-ordination capabilities in education are expected to rise sharply in near future. The rural elementary and secondary schools in India suffer heavily for want of adequate funds to purchase teaching aids which could supplement the classroom teaching done primarily through books and blackboards. With the advent of Educational Technology, vast array of instructional materials have become available to supplement the curriculum. The teaching methods of technique can be improved with the help of these materials. The various kits already supplied to the schools are quite oftem inadequate or not utilised properly due to the reasons such as

(a) Lack of trained teachers
(b) Breakage or loss of some items
(c) Fear of loosing or mishandling them
(d) Lack of proper attitude and motivation
(e) Irrelevant to support the curricular needs of the children.

On the other hand, one finds that some urban schools well-equipped with aids, purchased more often to justify the budget, seldom use them in any systematic or regular manner. In cities where educational television was introduced, one invariably finds the TV set not working and the teacher/administration/broadcasting agency not being able to coordinate its regular use in the class. There may be several reasons for the poor utilisation of this medium, the potentialities of which have been emphasised time and again. The films and slides are often too expensive to purchase in the Indian context.

One significant factor, though not the only one, which seems to underline all such failures almost globally to use simple or sophisticated aids is related to the involvement of teachers in the making of aid. His own interest in teaching must give rise to the necessary of aids, some of which he must make himself. If he is regularly involved in preparing his own aids, charts or models as it may be his appreciation for sophisticated aids is also likely to grow. If his involvement is not there in it, he may not use or encourage the utilisation. Without appreciation and participation he feels threatened by sophisticated aids such as TV and films.

WHAT IS LOW COST TEACHING AIDS

In the context of various media being used in the educational institutes, low cost teaching material is considered as some thing (other than book and Blackboard) which is related to the local environment. The environment may consist of the natural surroundings of trees, plants, river, pond or sea. There may be in the environment of near it, a market which has small or medium size industry. The market may provide very inexpensive material. The industry may provide some of the waste products. The community living in the environment may have a history and culture of its own, local art, craft, technology, trade and commerce etc.

Some of the examples of material freely available in the environment may consist of bamboo, empty match boxes, card-board boxes, crates, used bicycle spoke, used bulb,, shells, seeds, clay, thorns, used cigarette boxes, ball-bearing,etc. The low cost material accessible in the environment may consist of valve tube, torch bulb, wire, plastic tube, match stick, rubber band, nails, protractor,etc.

The concept of low cost aids, therefore, arises out of use of local resources and local technology, involving the local persons. In the above context, the low cost appropriate material in India includes charts, models and other graphic aids which could be prepared easily with the locally available materials to make learning effective, comprehensive and fascinating. Teaching aids have to be related to the teaching of concepts, sub-concepts and processes which are involved in the preparation of aids. It is, therefore, very relevant and important to see as to what particular teaching aid would be more appropriate for a given concept.

HOW TO PREPARE:

How does the teacher make such teaching aids which do not cost or cost very little ? Where does the material come from ? Has the teacher to prepare such aids all by himself or others are to be also involved ? Can the rural artisans become a part of such an educational attempt ? Above all, can the culture of educational media sadly lacking in the country begin, if indeed it can grow from the grass-root level ? If it can, where to begin, how to involve the teachers and the community in the process, are there examples of work done on these lines in small or big measures, what are their methods towards development of ideas and the wider dissemination ? These and many other questions have been shared with some groups and institutions in this module.

(a) This paper aims at providing the teachers an opportunity to develop and study the techniques and suggested material that may be used by him in his own environment rather than depending upon the ready-made aids to which he may not have any access.

(b) This paper outlines on some selected teaching aids which provides concise textual information with regard to the availability of material in the environment, selection of concepts, the media to be selected for preparing the teaching aids with available materials and involvement of local community in the preparation process.

(c) The module also describes the various materials available in the environment for the preparation of simple aids (either with low cost or zero cost) for better comprehension of difficult concepts at primary level.

(d) It provides an opportunity in understanding the values of the low cost and zero cost teaching aids in the present educational scenario of the country.

(e) It provides certain . ideas and information about the ways of obtaining help from local artisans, craftsman and talented persons to be associated with the teachers and students in making few ideal teaching aids.

(f) Keeping the real constraints in view the module has been designed for the teachers of rural primary schools to prepare few listed teaching aids by involving few creative students and local artisans depending upon the availability of the suggested materials.

SCOPE & PURPOSE OF USING LOW COST TEACHING AIDS

1) These teaching aids privide excellent opportunities to make but use of the childs sense of sight and learning for gaining useful learning experiences.

2) Provides a good substitute for the direct experience.

3) Helps in the clarity of difficult subject matter.

4) Works a good motivating force.

5) Develops desired interests and attention in learning.

6) Helps the students in memorization by providing adequate sensori experience or impressions.

7) Helps in adequate reinforcement to the learners.

8) Helps in positive transfer of learning

9) Proves useful in making use of maxims of teaching.

10) Helps in reducing evil effects of verbalism.

11) Helps in meeting the varying requirements of learners emerged on account of individual differences.

12) Helps in development of mental faculties of the children.

13) Helps in developing inquiry habit and scientific attitude among the children.

14) Proves helpful in building proper educational environment and maintaining appropriate classroom interaction.

15) Proves helpful in meeting inadequacies and shortage of resources in the field of education.

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MICRO-COMPUTER AND CHILDREN WITH SPECIAL EDUCATIONAL NEED

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Advancement of science and technology not only changed the way of life but also changed the teaching strategies for normal children as well as the children with special needs. It is worth mentioning here to make clear - some of the important terms often used while considering the use of the computer in the classroom. Computer Based Learning (CBL) is gaining more and more popularity. CBL can be divided into two main areas: Computer Assisted Learning (CAL) and Computer Managed Learning (CML). According to Hooper and Toye (1975) teaching people about computer (CAL) and teaching people with computer (CML). But it is evident that teaching people with computers encompasses teaching people about computers. Thus this distinction is superfluous. However, Maddison (1982) emphasised, the computer should only be introduced as a teaching aid, if it is likely to improve the quality of teaching.

CML: or TEACHING WITH COMPUTER

What exactly can a Micro-Computer do ?

1 Supply Individualised one-to-one approach: It attends to each and every individual. The individual can proceed according to his own pace. This creates motivation

for learning and the child does not feel that he is inferior to other children. Thus, it avoids inferiority complex and enhances self-confidence which results in developing positive self-concept.

2. Act as an Electronic Blackboard: The teacher can retreive the graphs and figures just pressing a key. He need not have to waste time in drawing them on the blackboard again and again. Once the programme is prepared that can be used by any body, any number of times.

3. Animate and Illustrate Concepts: The concepts can be illustrated with the help of concrete examples. Any object, or situation can be created on the screen with attractive colours and music which attracts the attention of the children. The examples can be repeated again and again till the child understands and retain them.

4. Reinforce Basic skills, i.e. provide opportunities for over learning: The computer programmes gives the feedback immediately. The reinforcement follows each and every correct response. This is very important for effective learning.

5. Computer is a good device for drill and practice: Drill and practice is carried on very effectively with stimulus variation without wasting time. Every thing can be planned in advance. The tasks can sequenced from simple to complex with proper planning.

6. Simulate: Many abstract concepts can be illustrated in simulated situation which may be difficult to explain verbally e.g. Rainfall.

7. Offer Problem Solving Activities: Many problem solving tasks can be presented through games and children can solve them by interacting with the computer without the help of a teacher.

8. Aid Communication: The word processors are very useful for those who cannot write clearly, especially the spastic children. They can easily type and print the materials and thus have a clear and attractive documents which would not have been possible otherwise. Those having speech problems can also communicate through computers.

9. Planning Aid: Lessons can be planned and prepared in advance and preserved in discs. The same lesson can be used by many teachers and the students as and when required.

10. Offer access to normal curriculum: Computer programming itself is based on task analysis. The curriculum for the normal children can be task analysed and simplified for the use of disabled children. The children with special needs will be able to overcome the gap by drill, practice and overlearning the prescribed lesson. Thus the disabled child can have easy access to the curriculum meant for normal children.

CAL: TEACHING ABOUT COMPUTER

Micro-computer can be an excellent teaching aid, if it is utilised skillfully and intelligently by the teacher. The teacher has to take care about the following matters.

(1) Selection of an appropriate programme or soft ware:
The teachers of special need children have to ask the following questions, before selecting soft ware.

A. Questions related to educational objectives:

- What are the educational aims and objectives of the program and are they clearly stated ?
- For what other teaching objectives might this program be useful ?
- For what age range is the program most suitable ?
- Are the identified objectives relevant and worthwhile for the children we are seeking to teach ?
- Could those objectives by attained just as well without the computer, using traditional techniques and materials
- How is attainment of the objectives to be assessed ?

B. Questions related to teaching methods:

- Is the teaching method primarily instructional (involving drill and practice or conveying structured information) or is it investigatory(proceeding by discovery with the child uncovering patterns, principles and problem-solving strategies).

- Is the program best used for class, group or individual work ?
- How frequently is teacher intervention required ?

C. Questions related to program design:

- Is the program accompanied by adequate documentation ?
- How flexible is the program ? Does it offer a range of options to cater for a wide range of age and ability levels ?
- Will the program carry the children forward at the right pace, pushing them along but without stress.

D. Questions related to pupil-machine interaction:

- Is the program stimulating and exciting and does it adequately reward success ?
- Are all messages in short, simple sentences, using everyday words that are likely to be familiar to the children ?
- Are the required pupil responses simple ?
- Is the program easy to control ?
- Does the program have a properly thought-out correction and retrieval procedure ?
- Does the program provide for the use of a concept keyboard, light pen or other simplified input device ?

E. Questions related to screen display:

- Is the display clear and easy to read ?

2. Add-ON-DEVICES

There are also several add-on-devices which can provide easy access to the micro-computer for children with special needs.

A. POP-IT-KEY BOARD

It has only nine keys and it is extremely easy to use. It is light and can be held in hand. The unique keyboard design is perfect for infants and those with special needs.

B. CONCEPT AND OVERLAY KEYBOARD

In place of normal keys it has large pressure sensitive areas. The keyboard is provided with a close fitting and clearly marked overlay, pressure on any marked area will produce an input to the computer. The overlays can be designed with letters, words or pictures. It is useful for MR, Visually impaired or hearing impaired children.

C. KEY GUARDS

A board which overlays the normal qwerty keyboard and allows access to the keys through holes. Thus enables persons who have poor finger control or who use other aids like head pointer. It is very useful for physically handicapped.

D. EXPANDED KEY BOARD

A large tough keyboard, widely spaced keys use for physically handicapped.

E. MICROWRITER

A hand-held keyboard with six keys. Using different combinations it is possible to type all the normal letters. This is useful for partially sighted and orthopaedically handicapped children.

F. QUINKEY

It is completely different form of keyboard which is plugged into the micro like concept keyboard. It is a single hand device having only Five keys (one for each finger) and a lower command key. Combinations of the keys enables the letters, numbers and punctuation of the qwerty keyboard to be selected.

G. JOYSTICKS

A lever like gearstick which sends various signals to the computer depending on which way it is moved.

H. PALAN TYPE

The system needs a trained 'palan type' operator to type the spoken words, in a machine short hand, on to a special keyboard; the computer translates this into phonetic english and displays on the screen. Seeing the spoken words on the screen helps the deaf persons to attend phone call, attend meetings, etc.

I. ALPHAVISION

It is useful for partially sighted persons. It is able to enlarge between 2 to 75 times. It also can reverse the image, the print being while on a black background which makes it easier to read.

J. VERSABRAILLE AND BRALINK

These are portable machines on which the user can type and store notes. Both can be connected to a printer to produce 'hard copy'.

K. SPEECH SYNTHESIZER

NAMAL TYPE AND TALK SPEECH Computer are speech synthesizer which can be connected to any computer with a serial interface. It offers the following facilities.

- instant conversion of typed text into speech.
- number pronouncing facility
- adjustable speed of speech
- unlimited vocabulary.

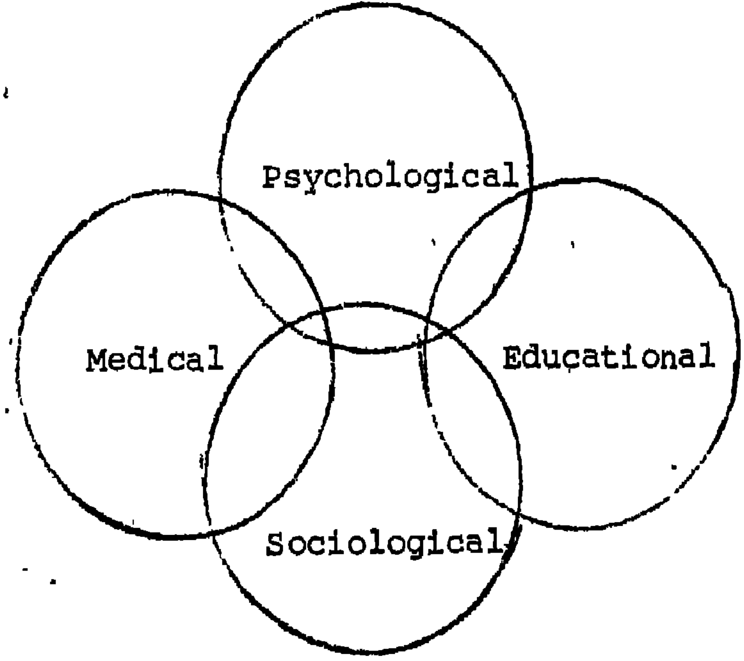
This is very useful for those involved in teaching-reading skills to handicapped and [illegible] learners wit speech deficit. It is also of immense value to the blind when used with BBC computer which has a braille keyboard.

MENTAL RETARDATION:

CONCEPT, IDENTIFICATION, ETIOLOGY, SYMPTOMS, REMEDIATION

Prof. K.C. Panda
Principal
R.C.E., Bhubaneswar.

A Set of Different Criteria of Mental Retardation and Points of Convergence



Impairment	Handicap	Disability(WHO)
Impairments (I Code), concerned with abnormalities of body structure and appearance and with organ or system function, resulting from any cause; in principle, impairments represent disturbances at the organ level.	Handicaps (H Code), concerned with disadvantages experienced by the individual as a result of impairments and disabilities; handicaps thus reflect interaction with and adaptation to the individual's surroundings.	Disabilities (D Code), reflecting the consequences of impairment in terms of functional performance and activity by the individual; disabilities thus represent disturbances at the level of the person.

A.A.M.D.

Mental Retardation refers to significantly sub-average general intellectual functioning existing concurrently with deficits in adaptive behaviour and manifested during the developmental period (Grossman, 1977).

Components of the A.A.M.D. Adaptive Behaviour Scale

Part 'A'

I. Independent functioning
Eating, Toilet use, Cleanliness, Appearance, Care of clothing, Dressing and Undressing, Travel, General Independent functioning.

II. Physical Development
Sensory, Motor

III. Economic Activity
Money handling and Budgeting shopping skills

IV. Language Development
Expression, Comprehension, Social language Development.

V. Number and Time

VI. Domestic Activity
Cleaning, Kitchen duties, Other Domestic activities

VII. Vocational Activity

VIII. Self Direction
Initiative, Perseverance, Leisure time.

IX. Responsibility

X. Socialisation

Part 'B'

I. Violent and Destructive behaviour.

II. Antisocial Behaviour

III. Rebellious Behaviour

IV. Untrustworthy Behaviour.

V. With-drawal

VI. Stereotyped Behaviour and odd mannerisms.

VII. Inappropriate Interpersonal manners.

VIII. Unacceptable vocal habits.

IX. Unacceptable or Eccentric habits

X. Self-abusive Behaviour.

XI. Hyperactive Tendencies.

XII. Sexually Aberrant Behaviour.

XIII. Psychological Disturbances.

XIV. Use of Medication

Source: ABS. Manual (1975)

Causes and Irevention

There are various causes underlying retardation.

Lead Poisoning

Today most victims of lead poisoning are infants and toddlers who are likely to take edible objects into their mouths. Common source of lead poisoning is use of lead paints in the wall, furniture, crib rails, toys, battery cases, chewing of lead pencils etc. The symptoms of lead poisoning include weight loss, anemia, stomach cramps and constipation. Other symptoms include mental depression, irritability, and convulsions. Lead poison is retained in the body and leads to permanent brain damage, and mental retardation. Lead poisoning is treated by using medicines e.g. 'EDTA' and maintaining a healthy diet. Lead free environment is to be ensured. Prevention is most important since it leads to permanent damage of the brain.

Infection and Intoxication

During the prenatal period the fetus is succeptible to damage from maternal infection and intoxication. Within the first three months of pregnancy, the mother's infection of rubella can lead to serious complications, such as: mental retardation, heart disorders, seizures etc. About 10 to 85 per cent of rubella babies suffer from these types of ailments. Mental retardation occurs due to congenital syphilis, although syphilis can be controlled. Postnatal infections caused by viruses, bacteria, parasites and fungi may also lead to mental retardation. Toxic agents cause damage to the fotus. Motherfetal blood group incompatibility can lead to death and spontaneous abortion of the fetus. This is inherited.

Trauma

Prenatal, Perinatal and Postnatal injury cause trauma. Radiation cause prenatal injury which leads to retardation.

Mechanical injury or birth injuries cause brain damage. Anoxia is responsible for mental retardation. Postnatal anoxia are caused by shock, respiratory difficulties, or le poisoning. The lead poisoning can be reduced by controlling the lead content in paint. The extent of brain injury will determine the degree of retardation.

Metabolic and Nutritional Disorders

Galactosemia is a carbohydrate disorder which is transmitted genetically. In such cases, the infants fail to metabolise the galactose in milk. Unless the child is placed on a low lactose diet, mental retardation onsets. Similarly when the body fails to change phenylalaline into tyrosine, it leads to phenylketoneurea. (PKU) which can be detected easily by urine culture or blood analysis. Low protein diet acts as prevention to such disorders. Hypothyroidism or Cretinism is a common disorder leading to low IQ.

Postnatal

Neurofibromatosis and Tuberous sclerosis are two examples of gross brain disease. Neurofibromatosis is hereditary and is characterised by brownish spots on the skin, and tumours in the brain and nervous system. Tuberous sceloris is characterised by reddishorange nobules in a butterfly pattern in the face and cheeks. This is hereditary. Its treatment consists of removal of tumours wherever possible and use of anticonvulsants in case of seizures.

Unknown Influenes

Microcephaly and Hydrocephaly are two types of disorders which involve cranial and congenital defects. These are due to unknown origins and they exist before birt

Primary microcephaly is inherited whereas secondary microcephaly is acquired. In the case of primary microcephaly the brain tissue is under developed but in relation to size of the cranium. Retardation ranged from mild to severe.

Overproduction or under absorption or cerebrospinal fluid is termed as hydrocephaly. The head is globe shaped, the bridge of the nose is flat and the eyes are pushed downward and become more widely spated. It is not hereditary. Surgery is applied to prevent further disorders.

One of the most visible condition associated with mental disorder is Down's syndrome. Mongolism was also used to explain this symptom because of similarity in physical features. Down's syndrome doubles when the mother's age exceeds 30 years. Down's syndrome contains non-sex determining chromosome. Chromosomal anomaly explains many forms of mental disorders. In nondysjunction Down's syndrome one pair of genes fails to separate at conception, resulting in an extra or 47th chromosome after fortysix (trisomy no.21). This is related to older age of the mother.

Translocation is common. It occurs because of faulty cell division in which one chromosome is attached to another. In Mosaicism, the cell receives an extra twenty first chromosome, but there are fewer abnormalities in this form of Down's syndrome.

The child with Down's syndrome has small ears, protruding tongue with deep fissures, slanted eyes, broad hands with short fingers, short stature and underdeveloped genitalia. Congenital heart disorders and respiratory complications are quite common.

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Degree of retardation in such cases varies from mild to severe. Treatment would involve special educational provisions and medication.

Turner's syndrome results from the absence of an X-chromosome in the female (XO). Learning problems are usually seen, including loss of hearing. Treatment includes use of female harmones to develop female sex characteristic Klinefelter's syndrome is seen in male due to the presence of an additional X-chromosome (XXY) and chrosome count of 47. The male usually develops female characteristics. Mental retardation due to this factor remains within the moderate range.

Gestational disorders like prematurity also causes mental retardation. Even post maturity is also harmful in the sense that surgery is applied for birth and because of extra growth, there is prolonged labour and consequent adverse effects on the brain of the newborn.

Severe environmental deprivation, special sensory handicaps (deafness and blindness) contribute to retarded development. Multiple handicaps such as epilepsy, and cerebral palsy also account for some degree of retardation.

After birth the child can contract diseases such as menigitis and encephalitis which can also result in retardation.

Metabolic or nutritional factors account for a large number of specified causes of mental retardation. Conditions such as phenylketoneuria and galactosemia can be controlled through special diets. Use of thyroxin can lessen the effects of cretinism and improved nutrition for both children and pregnant mothers can preclude the effects of malnutrition as a factor inthe etiology of retardation.

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Postnatal grown brain disease includes genetic disorders such as neurefibromatosis and tuberous sclerosis. Hutington's chorea is a condition that does not appear generally until a person is in the mid thirties, at which progressive deterioration of the brain occurs. Preventive measures include sterilisation.

Chromosomal anomalies can now be detected prior to birth through a surgical technique known as amniocentesis In this procedure a sample of the aminotic fluid surrounding the fetus is examined and if chromosomal abnormalities are present it can be determined that the child will be affected. A decision can then be taken to abort the fetus.

Environmental influences explain by far the greatest number of cases for which an etiological classification is given. Prevention focuses upon the enrichment or impoverished environment and the provision of high quality educational and social services.

Preventive Measures

Vaccination against rubella

Surgical procedure to correct hydrocephaly

Amniocentesis to detect chromosomal aberrations in the fetus

Use of drugs to control the effects of childhood illnesses

Blood transfusion of Rh-factor babies and vaccination of Rh-sensitized mothers.

Laws that prohibit the use of lead based

Paint on baby toys and furniture

Dietary Treatment of PKU and galactosemia improved maternal nutrition and parental healthy care

Genetic counselling for persons who are carriers of potential genetic defects.

Enrichment of poverished environments

Characteristics

General academic retardation (slow rate of learning, ineffective problem solving skills).

Poor Memory (STM)

Difficulty in conceptualisation (Abstract concepts)

Deficient in generalising ability

Slow and restricted language development

Below average imaginative and creative abilities

Short attention span and low tolerance for frustratio

Play and social interests below those of peers

External Control Ideology

Global perceptual functioning

Hyperactivity and Impulsive control

Educational Service Options

Basic assumptions :

1. Educational placement should be based upon the child's needs.
2. The child should be placed in the most facilitative (least restrictive) environment.
3. The placement should be flexible enough that a child could be moved to a different setting if the situatio warrented it.

The Cascade System

"The Cascade System is designed to make available whatever different-from-the mainstream kind of setting required to control the learning variables deemed critical for the individual case. It is a system which facilitates tailoring of treatment to individual needs rather than a system for sorting out children so that they will fit conditions designed according to group standards not necessarily suitable for the particular case" (Deno, E. 1970). Special Education: a developmental capital. Exceptional Children, 1970, 37, 229-237.

Instructional Techniques

1. Use material that matches the developmental level of the pupil. Be sure that success is possible.
2. Limit the length of the learning task to be commensurate with pupil's attention span.
3. Present the task in small, sequential steps
4. Introduce few elements of a concept in any period
5. Present concepts in a concrete manner
6. Provide repetition, especially distributed practice
7. Provide for transfer of learning by presenting the same concept in a variety of settings.
8. Present learning tasks that are useful in real life situation.
9. Use creative repetition in presenting tasks by varying the presentation slightly to maintain student interest.
10. Use the principle of over learning to teach mastery and to ensure long term memory of the material.

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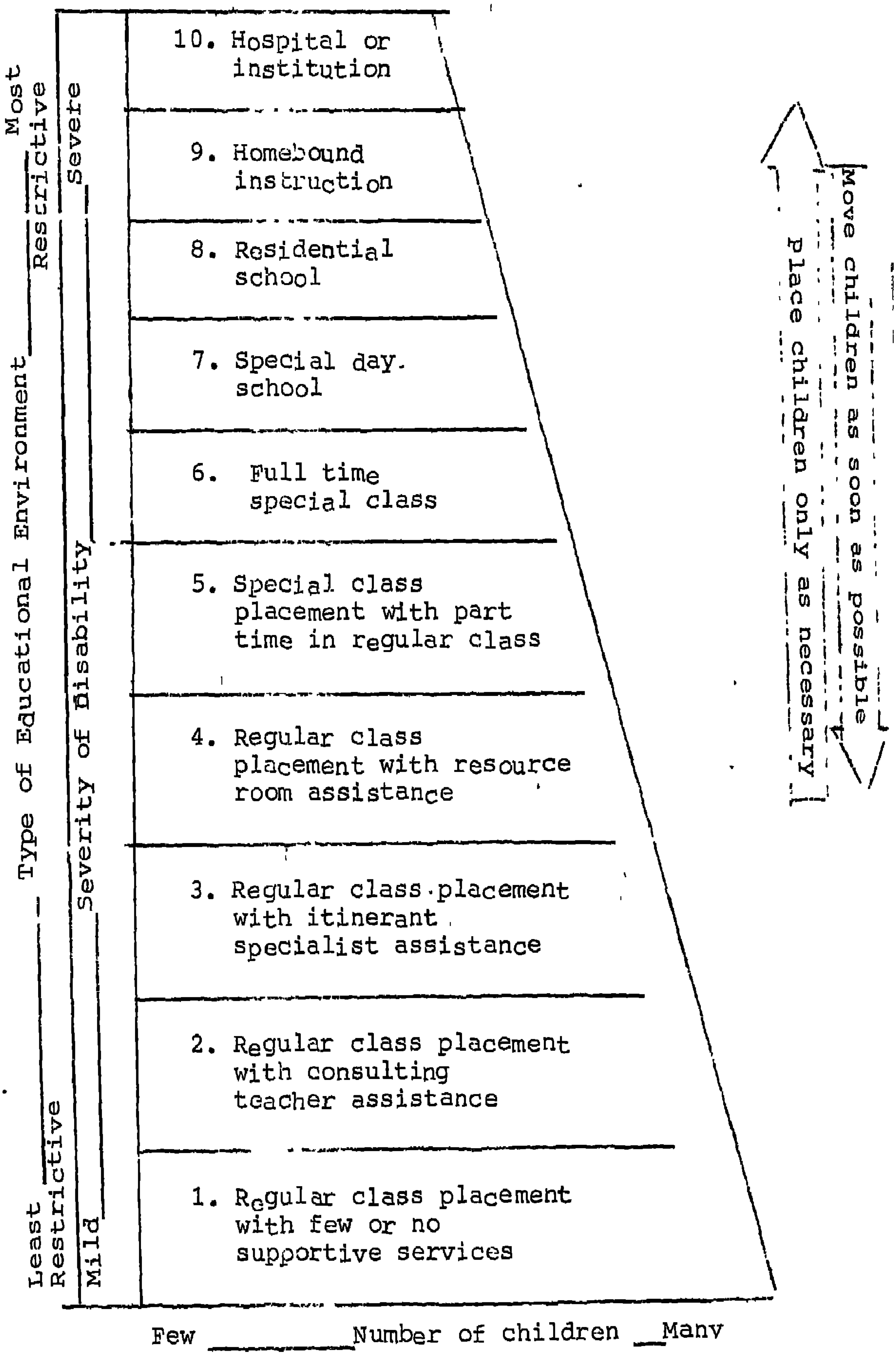
Figure 1-1

Continuum of Special Education Services


10. Hospital or institution
9. Homebound instruction
8. Residential school
7. Special day school
6. Full time special class
5. Special class placement with part time in regular class
4. Regular class placement with resource room assistance
3. Regular class placement with itinerant specialist assistance
2. Regular class placement with consulting teacher assistance
1. Regular class placement with few or no supportive services
Least Restrictive
Type of Educational Environment
Most Restrictive
Mild
Severity of Disability
Severe
Few
Number of children
Many
Move children as soon as possible
Place children only as necessary

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IDENTIFICATION AND REFERRAL OF MENTALLY RETARDED

Child Development

Growth and development of children follow apattern. Every child passes through certain steps at particular time in his life. These stages are called milestonesof development. It is important to know the normal milestones of development as it helps in identifying children who have delayed development. Some of the common milestones of development and the approximate age of their attainment relevant to Indian situations are given below. It should be kept in mind that some children may skip few of the stages.

Normal Milestones of Development

S.No	MILESTONE	AGE*
1.	Smiles at others	4 months
2.	Holds head erect	4 months
3.	Puts objects into mouth	4 months
4.	Rolls from back on to stomach	6 months
5.	Uses whole palm to grasp	7 months
6	Makes sounds 'anna','ad dadda'	7 months
7.	Sits without support	8 months
8.	Responds to name	10 months
9.	Crawls	10 months
10.	Stands by holding on to an object	10 months
11.	Holds object with thumb and index finger	10 months
12.	Stands without support	10 months
13.	Says 'amma','akka', meaningfully	15 months
14.	Walks without support	15 months
15.	Tells own name	18 months
16.	Drinks by self from a glass	21 months
17.	Shows body parts when named	24 months
18.	Indicates toilet needs	24 months
19.	Speaks in small sentences	30 months
20.	Unbuttons clothes	36 months
21.	Gives meaningful verbal answers to simple questions	36 months
22.	Differentiates big and small	36 months
23.	Identifies boy or girl	36 months
24.	Can button clothes	40 months
25.	Combs hair	48 months

(...2)

Identification of persons with Mental Retardation

We have seen how a normal child develops. Early identification of mental retardation is made by seeing how much a child is delayed on the milestones of development. Identification of mental retardation is done by using certain questionnaires or checklists called screening schedules. Three screening schedules are given below. The first is for the children below 3 years of age. The second for those between 3-6 years of age. The third is for those aged 7 years and above. In the description of normal milestones of development, the mean age of attainment alone is given. However, the age range has to be taken into consideration while screening for developmental delays. Hence the age range is given in the screening schedule-I.

Screening Schedule No.1 (Below 3 years)

S.No.	Item	Normal age range	Milestone delay if not achieved by:
1	Responds to name/voice	1-3 months	4th month
2	Smiles at others	1-4 months	6th month
3.	Holds head steady	2-6 months	6th month
4.	Sits without support	5-10 months	12th month
5	Stands without support	9-14 months	18th month
6.	Walks well	10-20 months	20th month
7.	Talks in 2-3 word sentences	16-30 months	3rd year
8.	Eats/drinks by self	2-3 years	4th year
9.	Tells his name	2-3 years	4th year
10.	Has toilet control	3-4 years	4th year
11.	Avoids simple hazards	3-4 years	4th year
	Other Factors		
12.	Has fits	Yes	No
13.	Has Physical disability	Yes	No

If the child is found to be delayed in any one of the items given from 1-11 and if the child has fits or physical disability, suspect mental retardation.

(....3)

Screening Schedule No.II (3 to 6 years)

Observe the followings :

1. Compared with other children, did the child have any serious delay in sitting, standing or walking? Yes No
2. Does the child appear to have difficulty in hearing ? Yes No
3. Does the child have difficulty in seeing ? Yes No
4. When you tell the child to do something, does he seem to have problems in understanding what you are saying ? Yes No
5. Does the child have weakness and/or stiffness in the limbs and/or difficulty in walking or moving his arms ? Yes No
6. Does the child sometimes have fits, become regid, or lose consciousness ? Yes No
7. Does the child have difficulty in learning to do things like other children of his age ? Yes No
8. Is the child not able to speak at all? (cannot make himself understood in words/say any recognizable words) Yes No
9. Is the child's speech in any way different from normal (not clear enough to be understood by people other than his immediate family ?) Yes No
10. Compared to other children of his age, does the child appear in any way backward, dull or slow ? Yes No

If any of the above items is answered 'Yes', suspect mental retardation.

Screening Schedule No.III (7 years or above)

1. Compared with other children, did the child have any serious delay in sitting, standing or walking ? Yes No
2. Can the child not do things for himself like eating, dressing, bathing and grooming ? Yes No

3. Does the child have difficulty in understanding when you say " do this or that" ? Yes No

4. Is the child's speech not unclear ? Yes No

5. Does the child have difficulty in expressing without being asked what the child has seen/heard ? Yes No

6. Does the child have weakness and/or stiffness in the limbs and/or difficulty in walking or moving his arms ? Yes No

7. Does the child sometimes have fits, become rigid or loss consciousness ? Yes No

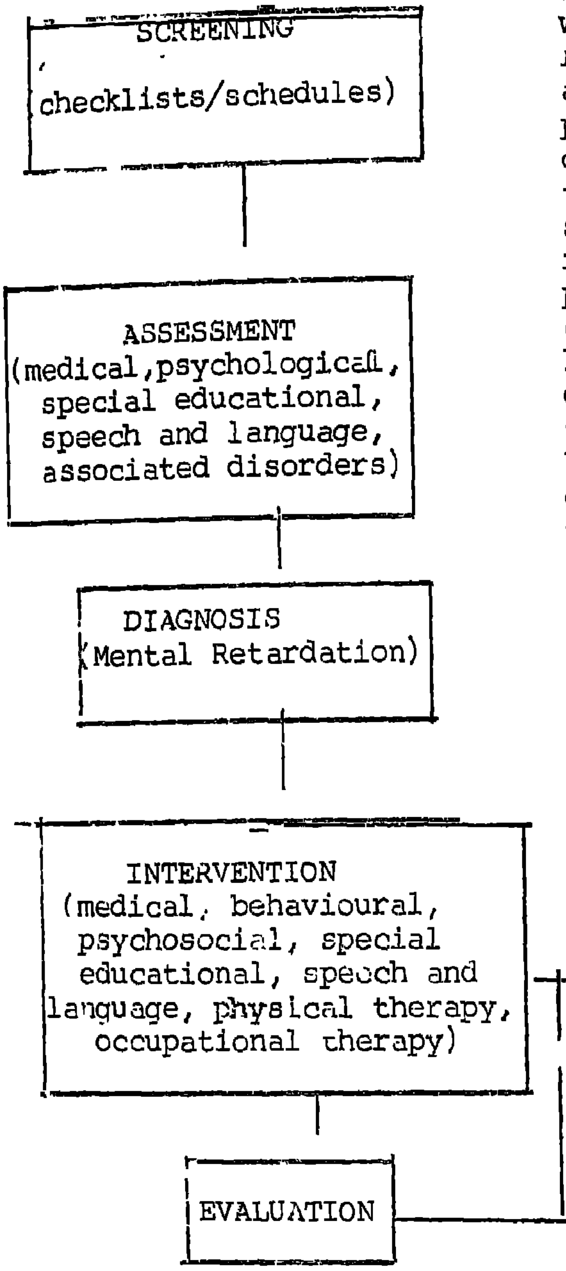
8. Compared to other children of his age, does the child appear in any way backward, dull or slow ? Yes No

If any one of the above items is answered 'Yes' suspect mental retardation.

Note : In the screening schedules No.II and No.III, there are a number of questions which are over inclusive i.e. those with hearing handicap or physical handicap or epilepsy alonewithout mental retardation can be spotted. These two screening schedules ensure prompt identification of every single mentally retarded child. Do not worry if the questions sometimes Identify persons with handicaps other than mental retardation. Such persons can be assessed later. Our chief concern is identification of mentally retarded children.

FLOW CHART:

Identification and Management



Referrals :

Once a case is suspected, the diagnosis of mental retardation should be established by a person who has adequate training in mental retardation. The places where such a diagnosis can be made are the paediatrics/psychiatry departments of general hospitals, mental hospitals, child guidance clinics and special schools for the mentally retarded persons. In addition, the psychologist/vacational guidance counsellor at the District Rehabilitation Centre can confirm the diagnosis. The following information is needed from the parents before arriving at the diagnosis - detailed history about the health of the mother during pregnancy, details of the nature and type of delivery of the child and difficulties encountered if any, details of the health of the child after birth such as immunization and illnesses such as fever, fits, jaundice and measles and history of similar illness in the family, After eliciting the history, a developmental assessment is done and if needed tests of intelligence are administered. The child is assessed on the assessment checklist to find out the current level of functioning. The child is examined by the medical doctor to find out whether there are any medical problems such as fits. If any drugs are necessary, they are prescribed. A management plan is then drawn out.

The management plan of the mentally retarded child depends upc the current level of the child and the associated conditions such as epilepsy, hyper-kinesis, behaviour problems and sensory handicaps. The management plan varies from infant stimulation, training in daily living skills and functional academics to prevocational and vocational skills. Apart from this, help is needed in speech, locomotion, management of problematic behaviour and management of medical problems.

(Source - NIMH Publications)

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PSYCHOLOGICAL ASSESSMENT AND IDENTIFICATION OF MENTALLY HANDICAPPED PERSONS

Mental retardation includes a wide range of conditions that may be determined by many factors of biological, psychological or socio-cultural nature. This view of mental retardation as resulting from a wide range of causes is of particular importance for identification, assessment and rehabilitation of mentally handicapped persons.

As the term is used today, mental retardation involves two essential components : (a) intellectural functioning that is significantly below average, and (b) marked impairment in the ability of the individual to adapt to the daily demands of the social environment. There is now widespread agreement that both intellectual functioning and adaptive behaviour must be impaired before a person can be considered to be mentally retarded.

Identification and assessment of mentally handicapped Persons :

The identification and assessment of mental retardation needs careful consideration. The severely mentally retarded can be more easily identified since their disabilities are more obvious. Those with a milder degree of disability are less easy to recognize and therefore need help.

Once mental retardation is suspected and identified it is important to apply appropriate objective tests of intellectual functioning and adaptive behaviour. Thebest test of a person's ability to respond to teaching is to provide him with skilled teachers and to experiment continuously with different methods of helping him to learn. However, such approaches are often not available.

Assessment need not be particularly time-consuming or require a skilled professional approach. Recently developed assessment measures take into account the importance of determining a person's actual functional abilities in key areas of day to day living and learning

(...2)

by systematic observation of that individual in ordinary settings, and the use of information from those who know the person well, such as parents, health care workers, and teachers.

Developmental Screening :

Developmental screening is a newly emerging concept with particular importance on infants and preschool children. Essential components of this concept, from a developmental perspective, are fostering optimum growth and prevention of developmental disabilities.

The term 'screening or " early identification" refers to systematic efforts to move up the point in time when problems are identified. Technically, the term "early" does not mean early in the life of the child, but early in the course of child's problem.

The main aim of screening is the earliest identification of any disabilities in order that appropriate measures may be taken to ameliorate or minimise the disabilities detected.

Prevention is more effective and economical, as a rule than rehabilitation, it is better to identify problems early and correct them promptly than to let them grow until a crisis requires action. The screening approach involved evaluating children at two stages. Firstly, to sort out children who are at risk, and secondly, those who are referred from screening to be further assessed, so that an early intervention may be instituted.

The major areas for of screening of young children include :

(i) Motor development
(ii) Perceptual and Neurointegrative functioning
(iii) Cognitive development
(iv) Language development
(v) Personal - Social and Emotional development.

(....3)

There are three important methods for obtaining screening information, as :

(i) Parent reports - involve parents' interviews, questionnaires and inventories.

(ii) Observational methods - refer to observation of child's behaviour, like easily distracted or focuses on task, persistent, relaxed or nervous etc.

(iii) Screening tests - consists of carefully selected items or questions of tasks to obtain systematic information of child's abilities.

II. Screening Tests :

A screening test should be a standardized measure with a high degree of reliability and validity. Some of the important commonly used screening tests are as follows:

1. Denver Development Screening Test (DDST)

DDST was developed by Frankenburg & Doods in 1967 to provide a brief developmental screening method to aid in early detection of delayed or abnormal development in children upto the age of 6 years.

2. The Developmental Screening Test (DST)

Developed by Bharat Raj (1977, 1983) DST was designed for the purpose of measuring mental development of children from birth to 15 years of age. It consists of 88 items which represent behavioural characterists of respective age levels. At each age level, items are drawn from behavioural areas, like, motor development, speech language, and personal social development.

3. Gesell Developmental Schedules (GDS):

The Gesell Developmental schedule, developed by Arnold Gesell (1925, 1947, 1971) represent a standardized procedure for observing and evaluating the course of development in child's daily life. It consists of selected items for assessing maturity at Key ages in infants and preschool children in four major developmental areas, namely, (1) motor development (ii) adaptive behaviour, (iii) language development and (iv) personal-social behaviour.

GDS provides an estimate of developmental Age (DA) and Developmental Quotient (DQ). It is a useful tool in developmental diagnosis and in identification of behavioural abnormalities and mental retardation.

4. Mc Carthy Screening Test (MST) is a part of Mc Carthy Scales of children's abilities (MSCA), one of the leading tests of general intelligence developed by Mc Carthy in 1972. The psychological corporation created a screening test out ofthe MSCA and published it in 1978.

5. Motor and Mental Development of Indian Babies : was developed by Pramila Phatak (1977). This is an adaptation of Bayley scales of Infant Development (1961) for Indian infants of ages ranging from 1 to 30 months. It consists of Motor and Mental Scales.

6. Seguin Form Board (SFB) :

Form Boards are commonly used for screening purposes. Seguin form board, also known as Goddard Form Board (Cattell, 1953) is a performance test of intelligence. It consists of ten common gecmetrieal forms like circle, square, triangle and others that are to be placed in the form board. It measures motor-co-ordination and form perception. It is a measure of learning ability of young children. SFB is used for preliminary assessment of Mental Age(MA).

7. Vineland Social Maturity Scale (VSMS) :

VSMS developed by Doll (1953, 1965) is a developmental schedule concerned with an individual's ability to look after his practical needs and to take responsibility.

An important Indian adaptation of VSMS was carried out by Malin to measure differential social capacities of an individual. This scale consists of 89 items grouped into year levels for age 0-15 years. It is designed to measure social maturation in eight major social areas, namely, self-help general, self-halp eating, self-help dressing, self-direction, occupation, communication, locomotion and socialization. It provides an estimates of Social Age (SA) and Social Quotient (SQ) and shows high correlation (0.80) with intelligence level.

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VSMS have particularly proved useful in screening and assessment of mental retardation.

The advantages of the above mentioned and other assessment measures based on social competence (e.g. AAMD Adaptive Behaviour Scales) over standardized intelligence tests are not only that they are easy to use but also that they are valuable in formulating teaching and rehabilitation programmes.

8. Assessment of Intelligence :

The stanford-Binet intelligence scale was devised in the U.S. by psychologists at stanford university following the procedures used by Alfred Binet in 1904 in France for testing intelligence in children. In the 1930's the Weschler-Bellevue was developed for measuring the intelligence of adults. Later the Weschler adult Intelligence Scale (WAIS) for persons above 16 years and Weschler Intelligence Scale for children (WISC) for children between 5 and 15 years was developed.

The Stanford-Binet test is grouped according to age level and places more emphasis on verbal skills. The WAIS has a verbal scale and a performance scale and the tests are grouped according to type rather than age level. All items of a given subtest are arranged in order of increasing difficulty.

Verbal and performance tests :

Verbal tests require thesubtests to express their answers in words. On the performance tests the subject is allowed to express his answers through hand movements such as arranging blocks to match a design and placing pictures in a meaningful sequence. For an individual who has been culturally deprived, has very little schooling, has a language problem or is unable to speak, performance tests allow the examiner to evaluate intelligence with minimum interference from speech and language handicaps. Symbolic representation differ in different socio-economic groups as well as in different societies and

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performance tests are constructed with the aim of making them " culture fair " as it is not possible to make them "culture free" totally.

W.H.O. glossary states : " The assessment of intellectual level should be based on whatever information is available, including clinical evidence, adaptive, behaviour and psychometric findings".

Intelligence testing has a very long history and an enormous amount of information has been collected on the performance of children and adults, males and females, of all ages using a variety of different tests. However, most of the standardization of these tests has been carried out in developed countries and cannot easily be applied in other countries. Ideally, each test should be restandardized for a particular country, which, however, would be very expensive and time consuming. But if IQ tests are used, it is essential that they are appropriate to the area where they are performed (the local culture), administered by persons specifically trained in their use, and regularly repeated, since studies have shown that increased opportunities and higher levels of demand and stimulation can change the IQ score. Too much reliance on a single, low value might lead to less enthusiasm in attempts to improve the individual's performance.

Despite the reservation for IQ scores, intelligence tests are still widely used in classification, epidemiology, and etiology of mental retardation.

One of the most confusing aspects of accounts of mental retardation is the variety of terms used, to describe the different degrees of handicap. The classification is as follows:

50 - 70 : Mild mental retardation
35 - 49 : Moderate mental retardation
20 - 34 : Severe mental retardation
Below 20 : Profound mental retardation

An IQ score between 70 and 85 is considered as borderline intelligence, or below average intellectual functioning.

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The WHO expert committee on mental health in 1968 suggested a sub-classification based on IQ, assuming a population meanIQ of 100 and a standard deviation of 15 points (see table-1), as given below : . .

Table-1. Classification and distribution of mental retardation proposed by the WHO expert committee on Mental Health in 1969.

Groups	IQ	Proportion of all mentally retarded %
Profound	0-20	5
Severe	20-35	20
Moderate	35-50	
Mild	50-50 (or 75)	75

The report stressed that the IQ is not an exact measurement and that in practice the categories would tend to overlap.

However, from the point of view of eiology, it is usual practice to divide mental retardation into two large groups:

(i) Severe Mental Retardation:

(which includes profound, severe and moderate disability) and (ii) mild mental retardation. Not only do these groups differ in incidence and prevalence, but also in the degree of handicap and ultimate prevalence, but also in the degree of handicap and ultimate prognosis. Persons with an IQ below 50 (representing an intellectual level of about 7 years in an adult) are generally characterized by some form of biologicalimpairment involving the central nervous system (CNS) while the mildly mentally retarded are much less often affected in this way. The more extensive the involvement of the CNS, the more often the person has additional impairments, e.g. problems of language or vision, epilepsy and / or cerebral palsy. As a result there is multiple handicap in more than 50% of the severely mentally retarded persons.

The profoundly retarded :

A very small minority of the mentally retarded are profoundly retarded. Their intellectual handicap is reflected in IQ scores of less than 20-25 and in developmental levels in adults corresponding to a development age of less than two years; they are also often severely physically handicapped, non-ambulant, and incontinent.

The severely and moderately retarded :

About 0.3% of all children are considered to be severèly or moderately retarded. Although many will remain to some degree dependent during childhood and adolescence, their eventual level of functioning in day-to-day life depends to some extent on the quality of the teaching or training they receive and the level of demand that is placed upon them.

The mildly retarded :

This group is much larger than the others. At school age about 2-3% of children have an IQ of 50-70; the frequency of this category, however changes markedly with age and many mildly mentally retarded children are latter able to function more or less inconspicuously in the adult community.

Many people with mild mental retardation are not identified, particularly in developing countries, until changes in general education and in the demands of employment life style usually increase the demands placed upon them, reveal their difficulties in adapting to such changes.

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Guidelines For Psychological Assessment of the Mentally Retarded Persons

1. Make a gross assessment of the sensory and motor deficits in the person.
2. Check whether the person comprehends the test instrctions and has adequate speech and language for communication.
3. Use one suitable standardized test battery (Binet test or WISC-R) which gives general ability index (IQ/PQ/DQ) and a few suitable sub-tests for individual abilities such as attention, perception, spatial or motor abilities.
4. Use one standardized scale for adaptive behaviour. The most widely used is the Vineland Social Maturity Scale.
5. When assessment by standardized tests is not possible because of the problems, behaviour check lists, developmental schedules, semistructured interviews and behaviour observations may be used to arrive at the general intellectual level.
6. Start with a simple test, preferably a non-verbal test such as Seguin Form Board or Gessell's Drawing Test to put the child initially at ease.
7. Keep few colourful, sturdy and useful toys suitable for different age levels. This will help in building rapport. At times this can be used to assess the developmental level in severely retarded persons (peg boards, Colour-form boards, rattles, blocks, stringing beads). Besides, some edibles like toffees and biscuits come in handy to increase motivation of non-cooperative children.

Tests Commonly Used for Mentally Retarded Persons

1. Developmental schedules.
   a) Bayley infant scales
   b) Gassell's developmental schedules
   c) NIMH Developmental Assessment Schedule.

2. Verbal tests
   - a) Binet Kamat Test (Kannada, Marathi)
   - b) Binet Kulshresta Test (Hindi)
   - c) Binet Shukla Test (Gujarati)
   - d) Malin's Intelligence Scale for Indian Children - Verbal Scale.

3. Non-Verbal tests
   - a) Developmental Screening Test
   - b) Raven's progressive matrices - coloured

4. Performance tests
   - a) Seguin Form Board Test
   - b) Gessell's Drawing Test
   - c) Draw - A - Man Test
   - d) Malin's Intelligence Scale for Indian Children - Performance Scale.
   - e) Alexander's Passalong Test
   - f) Koh's Block Design Test

5. Adaptive Behaviour Scales.
   - a) Vineland Social Maturity Scale.
   - b) American Association of Mental Retardation Adaptive Behaviour Scale.

6. Tests for specific abilities
   - a) Attention - Concentration, tests (Digit span, Cencellation, Knox-cube test)
   - b) Tests of perception (Bender Gestalt test, Benton visual retention test).

Report Writing :

Report writing is an important component of the process of psychological assessment. Some hints for writing a psychological report of a mentally retarded person are given below :

1. The psychological report must always contain essential data such as age, sex, years of schooling, and **mother**-tongue of the persons as well as names of tests administered and date of administration.

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2. The general test behaviour includes information about the level of cooperation for test taking, level of consciousness, hyperactivity, bizarre behaviours and odd mannerisms whenever significant.

3. Information about visual and auditory impairment, motor and speech deficits, attention and concentration have to be reported as they will influence the test findings.

4. The IQ score is a gross estimate of the person's general intellectual functioning. It does not indicate the marked discrepancies in skills usually seen in the mentally retarded persons. So, whenever possible, the mental age, performance quotient, social age and profile of abilities should be reported.

5. It is quite common to find a discrepancy of one to two years between the mental age and social age in the same person. Therefore, it is important that if the adaptive behaviour or social age is age appropriate with sub-average intellectual functioning or vice-versa a diagnosis of mental retardation is not made.

6. Significant observations about family interaction patterns, social adjustment of the person and stress factors have to be mentioned in the report. Any behaviour problems elicited or observed must be mentioned as they will influence training.

7. Information given in the report must be specific, for example, the exact behaviour should be reported and quantified as far as possible. The report must give specific guidelines to the teachers in the management of the mentally retarded person.

(Source - NIMH Publications)

EARLY IDENTIFICATION OF EDUCATIONAL PROBLEMS

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The fundamental purpose of a psycho-educational assessment is to gather representative data to use in formulating remedial programmes for the child. The teacher's role in this process should be that of identifying the learning problems of a child, through informal tests and observation, developing strategies for educational programming based on the observation and tests and reassessing the child to find out progress. There are a few principles/steps to be followed for the systematic assessment of the child.

Principles of Assessment:

An ideal psycho-educational assessment should comprise the following four steps (Smith, 1974) : (i) Identification procedures; (ii) Evaluation techniques; (iii) Development of an educational plan and (iv) Implementation of teaching strategies

Diagnostic Teaching Flowchart (SMITH)

Level I step	Children with suspected education problems, i.e. those that exceed the usual expertise of most regular class teachers, are identified as potential high risk youngesters and referred to some type of diagnosticien.
Level II step	Evaluation of the child's educationally relevant characteristics and the prominent environmental traits that may in some way be associated with obvious or suspected educational problems.
Level III step	Development of a comprehensive educational plan for the child - one that is based on diagnostic data that have been gathered about him and about his environment.
Level IV step	Assignment of the child into the most suitable instuctional environment as suggested by the educational plan which was generated at Level III.

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Identification:

As mentioned earlier, this step involves general screening to spot the children with learning problems. Individual teachers or parental referrals are also considered for identifying children with problems in learning.

Evaluation:

In this phase, more intensive assessment is carried out using specific evaluation tools including psychological and educational tests. By this the specific problems of the child are noted. Ideally, this step in assessment is carried out not in one sitting but through a few days, under different circumstances.

Development of Teaching Plan:

After gathering assessment data, a teaching plan is developed in this stage, based on the analysis of the data collected. It is very important that care be taken in using the assessment data appropriately for forming the educational programme of the child with long term goals and short term objectives.

Implementation:

The plan developed in the earlier stage is put into practice in this step. Children who have minimal learning problems might benefit from the resource room setting for implementing the teaching plan. This applies to borderline, EMR and learning disabled children. On the other hand, children with severe learning problems will need special class setting for the academic work. The non-academic activities can be programmed with normal children which will lead to social integration. However, the primary emphasis in the present phase should be on the remedial strategies for helping children and to integrate them with normal children to the maximum extent possible.

After implementation the children need to be reassessed to check for the progress and the success or failure of the plan that is developed and implemented. Therefore, the teacher must have a periodic assessment schedule, which is also called as continuous assessment. For this purpose Janet Lerner has developed a cycle called Clinical Teaching Cycle. As we see

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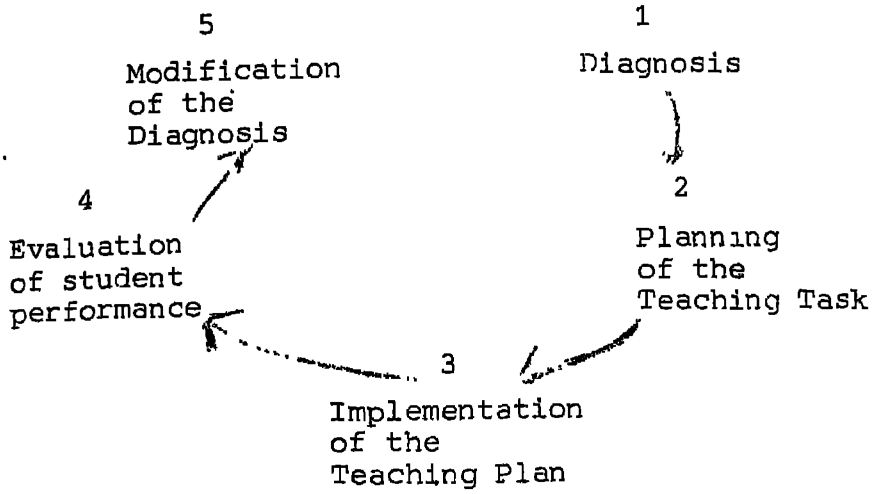
in the diagram, assessment is not an end in itself but is continuous and ongoing.

DIAGRAM OF THE CLINICAL TEACHING CYCLE


5
Modification of the Diagnosis
1
Diagnosis
2
Planning of the Teaching Task
3
Implementation of the Teaching Plan
4
Evaluation of student performance

Characteristics of Accurate Assessment:

An accurate psycho-educational assessment should give the following details regarding the child :

1. Should identify the subject's learning characteristics; style of learning and strength and weaknesses.
2. Should help in understanding the personality dynamics which leads to the setting up of educational programme.
3. Should precisely classify the child as mentally retarded, learning disabled, emotionally disturbed and so on
4. Should aid in homogenous grouping.
5. Should assess the progress and prognosis.
6. Should facilitate identification of educational readiness and appropriate placement.
7. The administration and scoring should not be too complicated to be used by the teacher.

Guidelines for Accurate Assessment:

1. Each assessment teachnique has distinct advantages and disadvantages when used with different types of children in different situations and therefore the best method is to employ a variety of assessment techniques.

2. As teacher has a major role in the assessment process there are certain desirable traits for the teacher. These are- emotional health and stability; good sense of humor; flexibility; ability to relate well to people; orientation of test results in problem solving and sound theoretical orientation.

3. The assessment must be done periodically as such continuous assessment results provide the teacher with evidence of successful instructions or faulty learning.

4. As the primary purpose of educational assessment is to directly use the results in teaching programmes, selection of inappropriate tests must be avoided, results must not be over generalized and care must be taken in interpreting test results.

5. All the factors related to the child's learning problems such as physical, psychological, social, socio-economic, cultural and environmental factors must be taken into account while assessing or taking the help of related services. This helps the teacher in recognizing the interfering factors in the home and neighbourhood and plan for the child accordingly.

6. Certain precautions must be taken while administering psycho-educational assessment. This includes, (a) training of the 'one' who assesses; (b) avoiding misinterpretation of test results; (c) confidential data of the child and family must not be used inappropriately; (d) the child's attitude towards testing such an anxiety, submission, resentment and perplexity must be considered; (e) using the same test too often for all children must be avoided.

As far as possible tests developed for Indian children must be used.

INDIVIDUALIZED EDUCATIONAL PROGRAMMING

The main purpose of individualized educational programme (IEP) is to provide 'appropriate' education and training to every mentally retarded child. Therefore development of IEP depends on the needs of the retarded child. In order to establish specific instructional objective it is necessary to acquire information that is instructionally relevant. This is obtained by assessing the child's current level of performance. The major components of an IEP are general background information about the child, thecurrent level of performance in specified skills, goals and short term objectives, method and materials required to achieve the objective, time required, the person(s) who would train the child to achieve the objective and evaluation to assess whether the objective is met. All these aspects will be explained in detail in the following pages.

A well planned IEP should have information on the programming for the child by the various specialists who would be required to provide services for thechild. For example, the IEP must contain programme in physiotherapy, occupational therapy, speech therapy and behaviour management in addition to special education, if the child requires those services. Hence a good IEP is evolved with the efforts of a team of specialists where the special educationist coordinates.

GENERAL BACK GROUND INFORMATION:

This data is collected as and when a child is brought to the experts. The family back ground, number of siblings, socio economic status, prenatal, natal and post natal history, developmental history and such relevant data should be collected to understand the child and the environment in which he is brought up. For example if the above details show that the child belongs to a rural family with illiterate parents, the IEP should contain more sketches and less written matter and material used should be basically rural. If the history shows that

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the child has epileptic fits which has not been attended to, he would have to be referred for medical attention. Thus the various details must be collected to understand the child as a whole, before planning.

ASSESSMENT :

This is one of the most important components of IEP as the whole programme depends on this assessment. The special educators must have a basis for selecting instructional goals and objectives. To establish the objectives, it is necessary to acquire instructionally relevant information. This would include details on

1. What the child is already able to perform
2. The effective sensory channel through which the child learns.
3. The behaviour problems that the child presents.
4. The effective reinforcement system.

The basic principle of special education is to accept the child ' at his level' and frame objectives. But most of the educators are not adequately informed on how to determine the specific point at which to begin the instruction. Information needed for instruction should consist of specific description of current level of performance and social behaviour, learning channel and the reinforcers. These are instructionally relevant. The teachers must be able to differentiate between educationally relevant and instructionally relevant information. That is, educationally relevant information is needed for placing students in groups, planning schoolwide curriculum and developing long term objectives for a group of children. Thisis obtained by norm referenced tests which tell where a child stands educationally in relation to 'other' children. This is not enough to plan for a child. What is required in planning specifically for a child is instructionally relevant information which is obtained by the criterion referenced tests. This would give details on the child's strengths and weakness as mentioned earlier.

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NORM REFERENCE TESTS AND CRITERION REFERENCED MEASURES:

Standardized tests are norm referenced tests as the population upon which they are validated constitute the norm groups. They yield test scores derived from the original sample population. Such tests compare the child's scores with the norm group. The important function of such tests is labelling, classification and grouping of children.

Criterion referenced measures are usually teacher made as they compare the child's performance to the fixed criteria set for the child. A well constructed criterion measure has excellent value for immediate instructional planning, as they reveal exactly what to teach to the specific child.

ASSESSMENT OF CURRENT LEVEL OF FUNCTIONING :

The teacher has to observe the child for a specific activity and then note down exactly what he does without interpreting. For instance, if a child is found to be able to remove his clothes when unbuttoned, but unable to wear or button/unbutton the teacher must note it down as it is, rather than just writ-ing 'dressing skills-inadequate' or 'needs help'. These do not say exactly what the child is able to do. Similarly, if a child is observed to be attending to an activity for 1½ to 2 mins and starts to run around the room after that, the teacher must note it down as it is and not simply 'short attention span' or'hyperactive'. Likewise in all the areas of development the skills acquired must be noted as observed. This requires the skill and efficiency of the teacher. If the assessment is wrong, the goal set will also be wrong, either too high or too low for the child. Therefore, it is necessary that the teacher develops competency in precisely assessing the current level of functioning which comes by practice. To completely assess the child she may need a week, in the natural setting. Certain information such as toilet habits and grooming may have to be gathered from the parents. Here again the precision of information will depend on the efficiency of the teacher to elicit the information.

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The assessment of current level of functioning of the child must include motor skills, self help skills, socialization skills, language skills, thechild's ability to follow single and multiple instructions, ability to identify objects used every day and their use, and concepts of colour, size, number, shape, sex, time and money. If the child has been going to normal school and has been referred due to poor scholastic performance, he should be assessed for his grade level functioning using the class books of regular school starting at the lowest class. His reading and comprehensiion ability, writing ability including copying, dictation and writing on his own and arithmetic ability must be assessed as per grade level. Assessment ofprevocational skills must include his current interest in various work in and outside the home, sense of responsibility, ability to take care of personal belongings and so on. In each of the above areas or wherever applicable if the level of functioning is accurately observed and noted, annual goals can be set for the child.

SETTING GOALS :

An annual goal represents the achievement anticipated for a child in an academic year. This is a prediction, which depends on the sequences of instructions to be carried out during the year. To make such a prediction, the teacher must take into consideration,

1. the child's past achievement
2. present level of paformance
3. the practicality of the goals chosen
4. priority needs of the child
5. the amount of time to be devoted in training the child towards the particular goal.
6. parental involvement
7. teacher's abilities.

The past achievement of the child should include a pattern of progress or lack of progress in earlier training. By analysing the earlier schooling, instructional methods, achievement records and the student's behaviour patterns the information on past achievement can be obtained. These cannot be obtained from IQ or achievement tests and the teacher must make it a point to get them from the respective sources. It is possible that the rate of progress at certain times could be due certain specific variables. This must be considered while writing the IEP.

The current level of functioning of the child can be obtained by assessing as mentioned earlier.

It is important that practicality of the annual goals is considered. Goals set too high or too low will not benefit the child. A child who has not learnt to use toilet independently cannot have academics as his goal. The goals chosen must be suited to the child's ability and the needs. Each child thus will have different annual goals.

When there is more than one goal to be achieved, they must be prioritized. A child who is not independent in bathing, toiletting, feeding, and dressing will have as priority goal toiletting, followed by feeding and other skills. Likewise a child who has destructive and self injurious behaviour and also inability to take care of his personal needs will have as priority goal, control of his self injurious and destructive behaviour before training in self help skills. In an IEP, the annual goals must be written in sequence as per the priority. The goals must be from simple to complex and ensure that the prerequisite skills are taught before the complex skills.

The priority goals might differ in home and school as the functions of the student differ in school and home. The perceived needs of the student will vary in the two environments. Therefore, in the IEP the goal for school and home must be specified. Feeding skills usually will be a goal to be achieved by the parent under teacher's guidance while teaching to read the name is goal for the teacher. There should be coordination between school and home and active participation of the parent must be emphasized.

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The amount of time devoted for attaining the goal influences the goal selection. Therefore IEP must have in it clearly mentioned, either the annual goals in terms of instructional time available or instructional time specified according to the goal. Many goals cannot be achieved in one year. IEP should not be mistaken for setting annual goal for totally learning a skill. Within one year it could be part of a skill to be trained, set as a goal. For instance teaching to count meaningfully is a goal that requires more than a year. Annual goal could be teaching to count meaningfully upto 10.

Keeping these points in mind, once the annual goals, are specified, the short term instructional objectives can be derived from the annual goals.

SETTING SHORT TERM OBJECTIVES :

Short term objectives are simply the breaking down of annual goals into smaller units so that specific strategies can be worked out to meet these objectives in a given period of time. In order to train the child to move from one level of performance to the next level, the IEP should have the short term objectives which would sequentially describe skills between where the child is now and where he should be in one year. That is, between the current level and the annual goal. Therefore, the short term objective must be sequential, with specifically stated desired behaviour and criteria, and role of the teacher and the student in achieving the objective within a presented period.

The objective stated must be in behavioural terms, specifying observable behaviour and criteria for mastery. This helps the teacher clarify exactly what is expected of the student and what he will do. For instance 'when asked Ramu will give objects numbering within 5 correctly eight out of 10 times by the end of 3 months'. This is totally observable and measurable.

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TEACHING STRATEGIES :

Sequencing the objectives is one of the key factors in successfully planning for a child. The skills can be broken into smaller parts for ease of teaching. For teaching a child to brush his teetch, his ability to follow instructions, holding the brush in appropriate position and so on are taught. The process by which tasks are broken down into sequential components is known as task analysis. This involves isolating, describing and sequencing all the necessary sub tasks which when mastered will enable the student to perform the annual goal. The process of task analysis is necessary forthe development of systematic instructional strategy. Though the concept of task analysis isnot new in the IEP, it is emphasized to a greater extent in planning programme. Systematic identification of short term objective involves beginning at the current level of functioning of the student, proceeding forward, identifying each subsequent skill and reaching the annual goal. Thus the last short term objective will be same as the annual goal in the particular skill.

An example of such a task analysisisggiven below.

Skill : To brush teeth independently.

1. Remove the cap of the tooth powder tin.
2. Put the powder in left hand.
3. Replace the cap of the tin.
4. Keep the tin on the floor.
5. Fold the fingers of the right hand except the index finger.
6. Keep the right index finger into the powder.
7. Rub the front teeth with the finger.
8. Keep the finger in the powder.
9. Rub the teeth on the lower left side.
10. Keep the finger in the powder.

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c) It stresses appointment of qualified special teachers as resource teachers. Specific proformas for application of grant and monitoring of information have been provided.

d) To ensure continuity of the scheme and reduce delay in the availability of funds, the funding procedures have been modified.

The stage of implementation has been upper primary or secondary in most of the States/UTs. Pre-primary education is almost missing. Close interaction among disabled and normal children in impressionable years promotes understanding and appreciation of the assets and limitations of each other. Pre-school education is the first stepping stone in the life of every child, normal or mentally retarded. The integration should start from the family, through immediate community and school, to the world of work.

The concept integrated education is an off-shoot directly emerging from the principle of normalization. Historically, facilities for mentally retarded were always considered separately from the regular school patterns. However, the recent trend seems to be in the opposite direction. While discussing the background, concept, characteristics, and issues relating to mental retardation with particular reference to mild mental retardation (50-70 points), Panda and Goel (1987) examined the conceptual basis and constraints of mainstreaming in relation to feasibility with supporting empirical research evidences. They further examined the inter-relationships between policy, education, development and research in the context of NPE-PA, 1986 and suggested a comprehensive coverage for policy formulation at the national level for the mentally retarded.

All types of provisions fer services to the handicapped have passed through certain stages of development. Karl Grunewald (1980) has identified such stages of which the first one is the diagnostic stage where diagnoses are made and plans are formulated to meet particular needs. The second stage is that of specialisation where particular needs are met by special institutions. The third one is the stage of differentiation in which it is realized that a particular service cannot be standardized for all recipients. The relevant factors in this respect could be different age groups, degree of retardation and the like. The final stage is a composite one characterized first by decentralization of services, then provision for integration of services to the retarded with those similar services available to the non-handicapped in the community.

Special education is an enriched form of general education aimed at enhancing the lives of disabled persons. Thus special education bears testimony to the concept of equality of educational opportunity. In view of this ideology, the principle of normalization was evolved in Scandinavia. Nirje, Wolfens Berger and Bank-Mikkelsen are the main pioneers of this principle which states : "Making available to all mentally retarded people, pattens of life and conditions of everyday living which are as close as possible to the normal circumstances and ways of life in society". Consequently, "Integration" and "Mainstreaming" became catch words in the Special Education Vocabulary. Normalization, Integration or Mainstreaming refer to the process of interaction of handicapped and normal children in educational settings.

Normalization implies the utilization of services and facilities made available to all persons, normal or otherwise, but which are culturally appropriate. It does not been "to make normal".

Mainstreaming refers to the philosophy of educational integration, i.e. retaining mentally retarded children in the regular classroom with supplementary assistance by specially trained persons.

Integration is an outcome of de-institutionalization. Integfation is always considered as social integration/academic integration or both. The strategy of integration is usually thought of as educational programming in which handicapped children attend classes with normal children on their full-time or part-time basis.

From the parents' point of view, integrated schooling appears to be less stigmatising. This will also extend an opportunity for the normal children to have some interaction with the handicapped children. Ordinarily prejudices, less compromising attitude, bias and ignorance prevail in most situations discouraging any close relationship between the two. However, under the IED scheme, children as well as teachers would become exposed to the retarded which would help them to develop an understanding and tolerance for them.

Patterns of Integration

There are four patterns of integration of mentally retarded children.

Full or Complete Integration

The mentally retarded children are enrolled in a regular class throughout the day and they receive support from the special teacher at some time during the week. Hence, the retarded children receive all the same services which are available to all the children in the classroom.

Partial Integration

Mentally retarded children are enrolled in a regular class but they avail the services of resource room and the resource teacher everyday in the school premises. The amount of time spent in the resource room varies but they generally spend a part of the day in the resource room. Partial integration may include academic and non-academic subjects.

Special Class in Regular School

In this system mentally retarded children are enrolled in a special class but they are integrated into a regular class for one or more subjects daily.

Reverse Integration

Normal children are enrolled in a special class so that they participate in academic and non-academic activities. This is often done on a short-term or temporary basis.

The principle in adopting a particular pattern of education should be that it is matched with the capabilities of the child. The mentally retarded children are assessed to identify those who need special education programmes and to determine where instruction should be begun. It is best to place the child in the least restrictive educational environment that meets the child's needs. There is a trend to develop and offer infant intervention projects for very young children to redue the effects of disabling conditions on later development. The pre-school handicapped child has the same needs, wants and problems as all other children, but he also has additional difficulties to overcome. The areas of development of most importance in young retarded children are gross-motor, fine-motor, perception, conceptual, social-emotional, communication and self-help. It is utmost essential to include parents in the education programmes for their young handicapped children (Goel, 1987a).

Education for All Handicapped Children Act

One of the major objectives of providing an integrated setting for mentally retarded is that they must be mainstreamed in the least restrictive enrironment. In the USA, the concept of integration has been embodied in federal legislation in 1975 which is implmented by "Education for All Handicapped Children Act" (PL94-142). It was regarded as the "Civil Rights Bill of Education". The major provisions of this act are :

i) Free and appropriate public education for all handicapped children between 3-21 years of age.

ii) Safeguards to protect the rights of handicapped children and their parents.

iii) Educating handicapped children with non-handicapped children to the maximum possible extent in the least restrictive environment.

iv) Developing and implementating an IED for each handicapped child.

v) Involvement of parents in the education of their handicapped children.

The basic intention of this law is to prevent an individual from being stigmatised through classification and labelling. When PL94-142 was developed, both professionals and lay persons confronted various attitudes and there has been a mixed bag of reactions-some favourable and some unfavourable.

Levels of Integration

Integration in the society to the fullest extent of the individual's capacity is part of the framework of the least restrictive environment. Nirje (1977) gave six basic levels involved in the concept of integration.

Physical Integration

Physical Integration means reduction of Physical distance between mentally retarded and normal children. Physical integration has to do with the basic security needs which are drawn from physical settings-living in a ordinary house, attending classes in a regular school building, working in industrial or business areas, and taking an active part in regular leisure-time environments.

Functional Integration

Functional integration is using the necessary and ordinary segments of the environment such as gyms, schoolyards, restaurants and public transportation along with the rest of the children. That is, functional integration means reduction of physical distance between two groups by joint utilization of resources.

Personal Integration

Personal integration pertains to meeting the retarded person's need to be loved through personal interaction with parents, brothers and sisters, friends and marriage partners.

Social Integration

Social integration deals with the respect and esteem that the retarded person experiences in the community.

Societal Integration

Societal integration provides opportunities for self-fulfilment, growth and achievement as a responsible and contributing citizen. Societal integration refers to adults and signifies that the mentally retarded have the same access to resources as others, the same opportunity to influence their own situation, have the same productive working role and form part of a social community with others.

Organizational Integration

Organizational integration focuses on the proper balance between generic and specialized services.

Implementation

To ensure the benefits of the IED programme, the administrator who is obviously the Principal of a school of normal children must be a qualified person and well versed with the problems of mentally retarded children. Also, the teachers must have knowledge about the assets and limitations of mentally retarded children. It is with this objective that Government of India is planning to start various training programmes in Special Education so as to enable the teachers to implement the IED programmes effectively. The Rehabilitation Council has already standardized more than one and half dozen training courses during the last one year for professionals dealing with disabled persons. The National Council of Educational Research and Training (NCERT) and the National Institute for Mentally Handicapped (NIMH) are developing curriculum, teaching materials and organizing training programmes for the untrained teachers from time to time. Special Education Cells have also been created in all the four Regional Collges of Education under NCERT for organizing various training programmes in the field of Special Education. The National Council of Educational Research and Training also prepared a draft syllabus for B.Ed.(Special Education). The following broad criteria may be adopted by the administrator to run an effective IED programme.

Admission of M.R. Children

Before admitting any handicapped child, the administrator must ensure that a particular handicapped child has only one nature of handicap and is not multiply handicapped. For instance, if the child is mentally retarded, he should not have any additional handicap like blindness, deafness, etc. Secondly, the administrator must ensure that the MA of the handicapped child is at par with his normal counterpart. Thus the retarded children will be chronologically much higher in age than the normal children in the class.

Availability of Instructional Material

The administrator and regular teachers must ensure that appropriate instructional material is provided for the educational needs of the mentally retarded children so that they may keep pace with the normal peers. Intensive efforts must be made to devise special teaching devices so that their learning ability can be improved. If the teacher is aware of the advantages of these devices, it may be beneficial to impart training to the retardates.

By instructing the retardate with material suited to his intellectual level, it is possible to improve his capacity to learn as well as apply the learning to varied situations (Goel and Sen, 1984, 1985). Instructional materials should contain a number of intrinsic elements in order to enhance their effectiveness in the class. The crucial factor lies in the teacher's responsibility to plan and develop and carry out consistent programmes that will fulfil the immediate or long-range goals of education for the retarded. For too long, teaching aids have been thought of as blocks, beads, clay, puzzles, hammers, scissors, etc. - the list is endless. When designing the material, questions such as "Does it enhance the attention ?", "Does it serve the purpose?", "How does it clarify or reinforce the teacher's verbal explanation?" must be considered. There is no doubt that concrete aids do help to make lessons more meaningful. They serve to attract and hold the pupils' attention. Concentration may be extended for longer periods than by purely verbal explanations. A well-designed teaching aid having more attention-getting quality arouses curiosity and interest in the subject. It certainly adds variety and broadens the learning scope. However, there is always the danger that pupils might pay more attention to the "aid" at the expense of seeing the significance of the subject to be learnt. The teacher must be alert to the moment when the aid becomes merely a "plaything". The balance between the "subject" and the "aid" is at times a fine hair--line.

The most recent innovation of teaching the children in classroom learning is through computers. Electronics is making revolutionary strides day to day and many sophisticated aids and equipments in the field of information and communication are being developed. The NFE-POA(1986) has suggested the induction of technology in education and rehabilitation of the disabled children. Thus a project on the development of softwave for the education of the handicapped has been planned by the National Council of Educational Research and Training.

Effective Resource Room Programme

Before supplying the equipment and instructional material to the handicapped child, a Resource Room teacher must be made available to teach the handicapped child to use these aids and equipments.

Apart from imparting educational instruction to the handicapped child, the resource teacher must be in constant touch with his parents for periodic guidance and counselling. The Resource Room will have essential equipment, learning aids and material. Some core facilities can be provided in each of the institutions individually (i.e. in the Resource Room) and some on shared basis (i.e. in the Resource Centre). Goel (1988) has discussed various Guides/Catalogues/Technical Aids Information Systems/Databases which have been developed for the disabled in India and abroad.

Coordination between Regular Teacher and Resource Teacher

The regular teacher and the resource teacher share responsibility jointly. The resource teacher not only helps these children to learn special skills but also helps regular teachers, administrators and parents in understanding the abilities and disabilities of these children.

Teaching and Learning

Learning is greatly influenced by organismic, task, method and environmental variables. Readiness for learning, motivation to learn, reinforcement, exercise, distributed practice, active participation, and over-learning are some of the important methodological guidelines of learning process. Since the retarded children often have difficulty with attention, short-term memory and association, there is need for overlearning to be an integral part of the educational programme. To control the chance of errors, accuracy instead of speed should be stressed. This is especially necessary in the early stages of learning when new and basic concepts are formulated, which will later form the basis for subsequent learning. Successful teaching requires : (a) careful grading of work, (b) more practice and repetition of main skills and facts with suitable variations and manipulation of the material, (c) visual activities through the use of pictures and concrete examples, (d) high motivation, (e) development of habits of attending, (f) some standard routines so that pupils know what to expect and experience a feeling of orderliness, (g) the teacher should speak slowly, use simple words, short sentences and time for words to "sink in", as too many words at a time tend to confuse the children, (h) break each task into the simplest components, define each step clearly, reward each step at once and not when the task is completed. The teacher can develop a method of prescriptive programming a number of skills through task analysis-both academic and social, as well as pre-vocational and vocational-throughout the student's school day. The systematic use of task analysis for programming school activities ensures the student's active involvement in as many activities as he or she is capable of responding to in an appropriate manner. Task analysis thus includes many of the features of a good clinical/prescriptive approach : it requires individual evaluation and diagnostic decision-making; it specifies an instructional sequence; it suggests teaching strategies; and it provides a system for recording data (Goel, 1987b).

Even though the mentally retarded appear to have slower learning and poorer short-term retention than normals, it is important to point out that the mentally retarded can learn a variety of responses sometimes almost as well as the normals. There is little available evidence of an appreciable deficit in long-term retention when the metnally retarded are compared with the normals, provided the two are compared on original learning (Denny, 1964). The relative inability of the retarded to inhibit responses may account for short attention spans. The deficits in duration of attention, symbolic behaviour, inhibition, and delayed response.

It has been seen that the basis of good memory is good learning. Therefore, the problem is to see how the learning process of the mental retardates can be made more efficient. The reasons for the learning deficit do not seem to be in the area of instrumental learning but rather in that of attention (House and Zeaman, 1958). If the item can be made more attention-catching, it will reach the retrieval phase earlier than other items. Novelty increases initial attention because learners are atracted to novel stimulus (Goel, 1982, 86).

These ideas about enhancing attention of retarded children by making instructional materials more informative and meaningful are effective only to the extent that they are fully understood. The teacher is the key person in this process. Without the teacher's skill even the most sophisticated curriculum will be limping and boring.

Development and Programme Support

The purpose of the IED scheme must be explained to regular teachers, counsellors, social workers, normal students, local and district level supervisors and administrative personnel. The job of each person must be clearly understood. Successful integration can only develop when each person works in partnership.

IED Programmes in Rural Areas

About 80 per cent of mentally retarded children are living in rural areas. It is disheartening that all the IED programmes are available in urban areas. The handicapped have to leave their families and come to urban areas. It is also disheartening that our trained personnel are not ready to serve in rural areas. Some package of incentives may encourage the resource teacher to make the IED programme a great success. The basic purpose of the IED scheme is defeated if the handicapped have to leave their families and shift to urban areas for receiving educational facilities. The IRDP and ICDS can play a vital role in this direction.

An Overview

Each person is unique and therefore individual differences are universal. This tenet is the basis for negating all efforts that keep retarded persons out of the mainstream of society. The principle of normalization affirms the humanness of all retarded individuals, whatever their degree of disability, and assures them of the right to life, liberty and the pursuit of an existence as close to normal as possible within the least restrictive environment. The burden does not fall on the retarded person alone. The community and the retarded person must harmonize their expectations.

The mentally retarded are capable of development and this capability can be more easily developed if they enter an educational programme very early in age. ~~Hence~~

with early diagnosis and proper stimulation, mentally retarded can be helped to reach as near a normal development as possible. This improvement is subject to the severity of mental retardation, the milder retardation, the greater the possibility of the mentally retarded getting integrated with the normals. When considering educational options for the retarded, it is important to keep in mind that (a) educational placement is based on the child's needs; (b) the child is placed in the most facilitative (or least restrictive) environment; and (c) placement is flexible enough that a child could be moved to a different setting if the situation warranted it. Considerable interest has been shown in the recent years on the need to equalize educational opportunity among special groups of children. To provide equal educational opportunity to this group of children, specific strategies need to be evolved. Integrated Education for Disabled Children (IEDC) has been considered to be a viable approach for achieving this objective. The Project Integrated Education for the Disabled (PIED) based on this approach was included in the GOI-UNICEF Plan of Operation for 1985-1989. The Programme of Action (POA) for the implementation of the NPE-1986 has stressed the need to strengthen the IEDC scheme to realize the goal of the UPE for this group of children. The PIED has been formulated in collaboration with the UNICEF and is expected to achieve the following objectives :

i) To increase enrolment of disabled children in general schools so that they can be educated with other children.

ii) To improve retention of disabled children in general schools through improved educational facilities by way of curriculum adjustment and adaptation of instructional methods and materials to their needs.

iii) To improve achievement of disabled children.

iv) To develop context specific delivery modalities to achieve the above objectives.

The POA stressed that as education of the handicapped in special schools is very costly, "it will be ensured that only those children whose needs cannot be met in common schools are enrolled in special schools. Once they acquire communication skills and study skills, they will be integrated in common schools". The accomplishment of this task requires careful planning and efforts to mobilise resources within the education framework as well as supportfrom health, welfare and labour sectors. Thus educating the mentally retarded involves a great deal of effort on the part of the school, educators, public, and parents. The cost may be high but the end justifies the means. If we can help the mentally retarded child to achieve his fullest possible growth, then the cost is worthwhile.

In a highly competitive world where success is judged by achievement, it is but natural that handicapped persons would lag behind their non-handicapped peers as they are disadvantaged in several ways-academically, physically, vocationally, and socially. The principle of normalization, though eavolved in Scandinavia, is universal in appeal and bears testimony to the ideology of "equality of opportunity for all". It is true that many practical difficulties and drawbacks do exist, both in developing and developed countries, but they can be overcome through community support, financial support, manpower development, orientation and training programmes, political will and gaining knowledge in understanding the assets and limitations of mentally retarded. The NPE will lay special emphasis on the removal of disparities and to equalise educational opportunity by attending to the specific needs of those who have been denied equality so far. The objective should be to integrate the physically and mentally handicapped with the general community as equal partners, to prepare them for normal growth and to enable them to face life with courage and confidence (National Policy on Education, 1986, Pp 6-8).

Normalization determines the effectiveness of service systems as these relate to the individuals and individation regards the uniqueness of the human being. Some of the individual differences are obvious, such as certain physical disabilities, and others are concealed to a certain extent, such as IQ, learning potential, and social adaptation. Yet it is uniqueness that makes for the individual strengths and limitations that should be utilized in upgrading the knowledge and skills of the retarded person. The path towards self-acceptance is particularly rocky for the retarded persons. They experience dissatisfactions in both interpersonal and intrapersonal responses. Thus the retarded individuals are constrained from moving from dependence to independence. Risks, rights and responsibilities are interwoven with acceptance. Opportunities for taking risks are the bases for obtaining and using right and for assuming the responsibilities associated with these rights. What every retarded person needs is the same as what every non-retarded person needs - self-fulfilment, self-dependence and self-esteem.

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COMPUTER ASSISTED INSTRUCTION FOR CHILDREN WITH MENTAL HANDICAP

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- Microcomputers can be the single greatest tool that educators have for teaching handicapped students.
- If teachers donot become computer literate over the next 10 years, they may be left behind in the field.
- Teachers should consider the use of microcomputers as management tools.
- As objectives are written by teachers in the school, they can be stored on floppy disks and shared among teachers.
- Accomplishing this storage requires that a standard coding system be used.
- One example of a coding system uses numbers in sequence by assigning a whole number to a goal, the whole number plus a decimal to short-term objectives related to the goal, and so on down to instructional objectives.
- Microcomputers in the classroom can help teachers manage daily tasks such as record keeping and IEP development, or they can be an instructional tool, helping students to practice learned skills.

- The use of computer as a sophisticated teaching aid which presents the instructional material to the stud and interprets his response is known as Computer assiste instruction (CAI). The use of computer to assist the teacher in managing the educational process by assessing the student's capabilities and prescribing a course of instruction is known as computer managed instruction(CMI
- Thus the computer can be used to teach a large number of students.
- How is this different from a lecture in the classroom, film, radio or television ?
- The main argument in favour of CAI is its ability to provide individualised instruction.
- Children differ widely in their abilities and they work at different rates and with different levels of accurac and comprehension.
- The conventional schools are unable to offer courses of instruction tailored to meet the needs of each individu child.
- The computer can handle many students and allow each to proceed at his own pace and level of achievement.
- An important aspect of CAI is the provision of immediate knowledge of results.
- The system also demands the attention of the student during the entire session, just as an individual tutor.

CAI has several advantages that can be applied to the instructional needs of many retarded learners.

Rupley and Blair (1983) have identified six advantages of microcomputers that can make them helpful to retarded students.

(a) Enhancing student interaction and motivation
(b) Providing immediate feedback
(c) Providing record-keeping capabilities
(d) Providing needed reinforcement
(e) Allowing self-paced instruction
(f) Freeing the teacher to work with other students
    while some students work on the computer.

Ager (1985) reports on the development of the MICROMATE system-a microcomputer-based teaching system for the severely mentally retarded.

Ager believes that any task suitable for a person who is severely mentally retarded needs to be (i) fully accessible (i.e. any equipment or materials required must be easy to handle), (ii) interesting (i.e. capable of attracting and maintaining an individual's attention); and (iii) reactive(i.e. something will happen when the individual responds appropriately or providing rewarding consequences).

Microcomputers can be a great asset in teaching,reading, spelling, written expression skills, arithmetic skills, communication skills, etc.

- The application of microcomputers in classrooms f retarded learners is more widespread.
- Microcomputers can be extremely useful for the teachers if they understand some of the basics of programming. However, these skills are not a pre-requisite for using CAI.
- Teachers must know the basics of hardware (e.g. computers, monitors, disk drives) and care of th equipment.
- An important task is to choose the right software for using in the classroom.
- Kamil (1984) has identified some key concerns in evaluating educational software, beginning with th question, "Does the programme do something better than what could be done without a computer?".
- A key concern involves judging the content and deciding whether or not it is appropriate to the existing curriculum.
- Retarded learners require frequent and meaningful feedback, therefore, teachers should review whet or not the programme provides frequency and specificity of feedback.
- Also, the programme's use of attention -getting devices such as pictures, animation, music, and colour capabilities can make a difference in its effectiveness.

- Another important aspect of software is the speed at which the material is presented. Retarded learners will vary in how fast they can process information and a programme providing varied presentation speeds can be the most efficient choice.

- Also, cost effectiveness is an important consideration. Cost effectiveness relates to the amount of content available. One programme can cover considerably more information than another and yet both will cost the same amount.

- Thus the microcomputer is extremely useful as a teaching aid.

- Initially it may seem expensive but it is quite reliable and economical teaching aid for the retarded children in the long run if the schools are able to procure appropriate hardware and software.

- India should take a lead to provide trained manpower, suitable hardware and software for the benefit of retarded children in regular and special schools.

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SPEECH AND LANGUAGE ASPECTS OF MENTAL RETARDATION

Introduction:

There is nothing more elemental in all existence than communication - it is the very essence of life. All creatures great and small, even unto the tiny amoeba are connected in an endless ebb and flow of messages. But it is in humans that we see its ultimate expression in the marvelous vehicle of language (Van Riper, 1984). Language has two constituents: a supply of symbols (a code) and a set of procedures ('rules') for combining them into coherent units of information. Words, the most common of symbols, must be arranged in particular ways to fulfil the interest of the person communicating. Although there are many ways in which we use language, the sending and receiving of spoken messages is our most frequent and important way of our sharing our minds and relating to each other.

This important development does not take place easily among all children. Mental retardation is one of the major detriments of language development, a majority of mentally retarded children show delayed language development. In an attempt to understand the problems of language acquisition, four factors which have close relation to language development are discussed below:

1. Conceptual development: The child's conceptual knowledge forms the pool of information and meaning that underlies language. At the same time language contributes to the development of concepts and knowledge in general.

2. The second factor is the child's information processing skills, included are sensory systems, attention, inter modal connections, memory and cognitive strategies. It is through these functions that we take in information, both linguistic and nonverbal, and that we express ourselves. These processes are the bases for specific skills such as

audotory memory span, that are of concern to professionals working with language disordered children. Conceptual development depends on the child's information processing capacities.

3. The third factor is human relationships. Communication does not occur in a vaccum. We cannot communicate without entering into human relationships to some extent. Thus the use of language is unseperable from participation in such relationships. This observation is important because clinical work and teaching are human relationships, that leads to study of family structure working with parents.

4. Forth factor is the nature of language itself. Language has two major functions. One language is representational, i.e. we use language to represent our knowledge of reality, both concrete things and events and abstract thoughts and theorics. Two, language is a communicative medium - to exchange information with other human beings. The representational function is related to perception, the development of concepts, logical thinking, and other areas of cognition and is the avenue of most school learning. The communicative function is also involved in learning but is in addition a major mechanism in the conduct of our daily lives and ultimately a fundamental means of participating in human relationships.

This dual function of language has a circular quality i.e. at a deeper level these two functions are united. We represent what we know with language. When we communicate, we communicate this representation. At the same time much of what we know is acquired through communication, and much of that through language (Walzkwick, 1976). The four factors interact with one another and it is necessary to bear in mind this complexity. This rather elaborate introduction was felt necessary to understand the complex nature of language and its acquisition. Since from our experiences we understand that

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these factors like conceptual development, information processing skills, human relationships etc. are poorly developed in mentally retarded children, any attempt at language teaching has to be thoroughly well studied and organised.

Speech & Language disorders & Mental Retardation:

When do we call speech abnormal or disordered ? "Speech is abnormal when it deviates so far from the speech of other people that it calls attention to itself, interferes with communication, or causes the speaker or listeners to be distressed". That is, speech is defective when it is conspicuous, unintelligible, or unpleasant.

There are many ways in which we could classify the various speech disorders, but if we look at the behaviour itself, they seem to fall into four major categories: articulation(for errors in speech sound production or usage), voice (for abnormalities in pitch, intensity, and quality), fluency (for deviances in the flow of utterances) and symbolization (difficulties in encoding or decoding) (language). This four fold classification, it should be understood, refers to the outstanding features of the behaviour shown. For example, the outstanding feature of the mentally retarded children is connected to language delay. Although these children also show defects in articulation, fluency or voice, the major disorder in mentally retarded children is classified under language disorders.

Many retarded individuals demonstrate impairments in speech and language. The impairments are probably related to two factors. First, language is heavily interviewed with cognition. Second, the communication pattern between the retarded child and the environment may differ from those experienced by normal children.

There is a wide range in the severity of retardation, from mild to borderline deficiency to profound impairment. All aspects of language-phonology, grammar, semantics, and pragmatics are disordered, and the degree of involvement is related to the severity of retardation. To illustrate the range of language impairment in mental retardation, four brief clinical portraits are presented below:

Borderline or Mild Mental Retardation:

These children might develop good vocabulary and have adequate sentence structure, but they would exhibit difficulty in using language meaningfully to understand and express abstract . ideas. The sentence type that these children use would be very redundant and limited in variety. These children are found to use common words like this, that, one, some-in the place of specific ones. These children might show delay in catching on with humor and may have difficulty in comprehending expressions with double meanings. Additionally these children show deficits in articulation of certain sounds like /d,/s/,/z/ etc.

Educable Mental Retardation:

The onset of speech development is generally very late in these children. These children take a long time to learn tenses, different sentence types,etc. The length, complexity and structural variety of the sentences would generally be limited. These children show inappropriate grammatical behaviour, for example, difficulty in finding subject verb agreement. Phonologically these children are found to omit certain type of sounds like fricatives (eg./f/,/v/). Certain children would also present huskey/harsh voice, which would make it difficult to understand even when the articulation is accurate. Certain children particularly Down's Syndrome children are very affectionate and attain good social adjustment.

Trainable Mental Retardation :

Children in this category have limited but functional use of language. They can comprehend and express messages which relate to his basic needs. The syntax (grammar) is limited, in which simple noun-verb combinations are observed. The vacabulary is mainly restricted to concrete daily used items. These children may repeat questions itself when they are questioned. The language can be said to be a surface language, because these children use words as labels, not as concepts. Rarely these children express their experiences through language. These children may rely on gestures and other body expressions to understand other's speech.

Custodial and Profound Mental Retardation:

Rarely these children develop functional oral language. Oral expression may be limited to cries, groans, and a few barely intelligible words. These individuals respond to signals which relate to basic needs such as food and toilet.

Since mentally retarded individuals present such a diverse range of disorders it is difficult to generalize their language disabilities. It must be remembered that the interest of the mentally retarded individuals are best served by taking individual characteristics of each child which would enable us to form effective intervention programmes.

ASSESSMENT FOR LANGUAGE TRAINING:

Generally the term 'assessment' is associated with diagnosis rather than treatment. When we talk about assessment of language functioning we are talking in terms of training and therapy. It is well known that a sound knowledge of child's abilities and difficulties would form a good basis for successful teaching. However assessment is the first step in the teaching or training sequence and is a continuous process. It is followed by task selection and analysis, presentation and evaluation. These steps may be summarized as follows: (Mittler, 1973)

1. Assessment: is the first stage, during which a profile of the child's strength and weaknesses is produced. This may often be achieved by the use of tests of various kinds, whilst in other cases, care-ful recording of general and more specific observations may be more appropriate. Ideally however, test data backed up by first hand observation should produce a more balanced picture.

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2. Task Selection and Analysis:

With the first stage completed, it is possible to select a relevant teaching task pitched at the appropriate level of difficulty, and then to analyse. the task in such a way that it can be presented in a series of small incremental steps which may be elicited successively and successfully from the child. At this stage it is also essential to state the behavioural objectives, i.e. what it is that the child will be able to do after training that he could not do before.

3. Presentation:

With the third phase comes actual presentation of the learning task, due regard being given to the production of the most favourable conditions. It is necessary to have decided upon contextual variables, such as location and time. Further more, the reward system itself needs to be selected and employed appropriately and consistently.

4. Evaluation:

The fourth and final stage of process is evaluation by which the teacher decides whether the teaching objectives have been achieved. This may be done either by using a test or by systematic objective observation.

Recently, the language is being viewed as much broader than speech or talking, and communication as broader than both speech and language. Some of the basic definitions commonly used are given below, before assessment is discussed.

Hearing is the rece-ption of sound by the ear and its transmission to central nervous system. The processes involved are primarily physiological.

Listening involves attending to sounds heard with the object of interpreting their meaning. Processes involved in listening are primarily psychological.

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Speech involves the use of systematized vocalizations or articulation, usually to express words or verbal symbols.

Language is essentially a system of symbols, a symbol being defined as some thing that stands for something else by convention or code rather than just by similarity or resemblance. The symbols in language must be systematically related to one another and must be capable of generating novel utterances, so that knowledge of language implies that the user can both understand and produce utterances which have never previously been understood or produced. When we talk about language of mentally retarded, we are talking about the system that they have learnt. When we refer to speech of mentally retarded, we are referring to the actual behaviour of these individuals in using language. (Corroll, 1967).

Communication may be regarded as a system of interaction between two or more people. It need not involve either speech or language, but can be highly systematic, and may involve a formal symbolic system of sign and gestures.

Assessment of hearing is primarily a job of an audiologist and it is recommended that all mentally retarded children be tested for their hearing. However, assessment of listening abilities may well be done by the teacher. Even though there is no trace of hearing impairments, a number of children must be regarded as poor listeners. Assessment of listening ability can be done at various levels of rigour. For example, The teacher may make very general observation based on her knowledge of the child, and record on the basis of a day's observations, those sounds and situations which seem to be attended to and those which are not. Alternatively the child's preference for one kind of sound as opposed to other kind can be tested. Does he seem to prefer high tones (bell or squeaker sounds) or low tones(drum sounds). loud music or soft rhythmic music, human voices or other sounds? One problem is in defining what is a response. Children many turn around not because they prefer a particular sound, but because they are aware that some one is standing behind them, Some children may not turn around for a sound because they have heard it too often.

To come over these problems, situations will have to be carefully designed so that choice of response is available. The basic principle here is that the child must work to make a positive response.

Assessment of Receptive Language and Expressive Language

Many parents and professionals seem to identify language development with what a child says rather than with what he understands. This is a curious placing of developmental cart before the horse, since we normally learn to understand language long before we start to speak, and continue all our lives to be able to understand more complicated sentences than we may actually use. It is too easy to assume that a child 'understands everything you say', when more careful assessment will often indicate that this is not the case. The process by which we try to understand the language of others represents a series of more or less informed guesses and predictions. The cues we use may be connected with context or topic of conversation, the tone of the voice, and the non-verbal signs that accompany most conversations.

If comprehension is to some extent a matter of guessing and prediction, then the mentally retarded child is likely to be at some disadvantage, since he lacks a wide background of experience against which to compare new utterances, and may also be less skilled in using cues during conversation.

The extent to which a child can understand spoken language can be assessed in a variety of ways-including standardized or adhoc tests, or by structured observations. Since standardized tests that suit to our population are practically non-existent for regular use, much of the assessment is done using checklist and systematic observation procedures. One of the main problems about language comprehension assessment is that, one can rarely be sure whether he is responding to the whole complex of communications of which the actual spoken language is only one element. If we really want to find outhow much language only is understood, all the non-linguistic cues are to be eliminated. A teacher can devise simple games in which the child . can only respond appropriately by really listening to and understanding the instruction rather than by guess work. For example, child who obediently goes and closes the door for the command for close the door, need not necessarily be comprehending the instruction. Since he would be used to the same situation, again and again, even looking at the open door is enough to make him complete the task.

Two suggestions could be useful which would link assessment and teaching. (Mittler, 1973). In the first place, the teacher can plan a programme of teaching which begins by giving the child a great deal of information by both verbal and non verbal means but which gradually removes one by one non verbal cues, leaving him with nothing but the language of instruction. Thus, the teacher might begin by asking the child to do something fairly simple or obvious, at the sametime pointing, gesturing and even shaping up the child's movements to comply with the request. These non verbal cues then be grdually faded out, so that the child could be helped by small stages to respond only to the language of instruction. In case of difficulty or failure, non-verbal cues can be temporarily brought back as prompts.

Secondly, it may be possible to teach the child to signal non comprehension such specific signs would help the teacher/others to adjust their communication skills. The use of non verbal gestures and signs should not be dismissedas 'primitive' methods of communication. Such methods can be seen as stepping stone on the road to expressive language, and can be discarded as the child learns to use verbal modes of communication. It is worth reminding ourselves .that most normal babies use a universal non-verbal language of signs and gestures to which people respond intuitively and instinctively.

We have dealt in slightly more detail regarding receptive language because moreattention needs to be paid to teaching children how to understand language as a foundation for learning to speak.

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Play: We all accept that play is a way of learning , a means of exploring the environment and acquiring experience about its properties and characteristics. Where as all play can be enjoyable and productive, some kinds of play seem to be particularly relevant in building foundations for language development. It is recommended that an observation of child's play is an essential part of the assessment process, and that this is relevant long before the child begins to speak. The following are examples of a few practical play situations relevant to language development.

Object permanence: Object permanence is usually defined as a stage in the intellectual development of the young child when he seems to understand that objects continue to exist even when they can no longer be seen. As far as expressive language skills are concerned, objects permanence seems essential to the process of labelling and early vocabulary development, otherwise names of objects would be imparmanent. It seems reasonable to assume that activities which help a child to acquire object permanence will also help to establish the foundation of language development. Following are some of the games that are relevant to object permanence. The teacher may note whether and to what extent these are seen in a child's behaviour.

(i) Reaching for objects: (visually directed reaching) By reaching for the objects the child can bring them into relationship with his own body, can explore physical properties such as color, shape, size, etc.

(ii) Dropping objects to secure retrieval: Through these games the child learns that the object that has disappeared can be made to reappear.

(iii) Peep-bo: A more social and enjoyable version of the same process. The game teaches the child that a loved face which temporarily disappears is still somehow "there" and can be brought back at will.

(iv) Imitation games: imitation training is seen as an important means of language teaching imitation games depend on object permanence, to some extent, since the child must have some concept of what it is that he is

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supposed to imitate. It may be mentioned here that Imitation of body movements and simple actions can be lead by small stages of imitation of head, mouth and tongue movements, and finally to imitation of sounds and even words.

(v) Imaginative and symbolic play: Pretend games of various kinds are also intimately linked with language development. Successful programmes are being reported in which even severely language retarded children are introduced into a play programme, in which for example, they might begin by playing with real life size objects which are then gradually reduced in size over a suitable period eg: cups become smaller, as do dolls until the child may reach a stage where he is feeding imaginary food in an imaginary spoon to a minute doll.

Assessment of Expressive Skills: Assessment of expressive skills begins usually by assessing non verbal expressions such as pointing to objects, progressing into verbal utterance from sounds to sentences. Factors like clarity of speech, quality of voice are also included. It is useful to observe the child's performance in a natural setting like a home. Since this is not always practical, parents may be instructed to make careful but detailed observation to facilitate teachers assessment.

Attached is an assessment checklist for communication skills which could serve as a guide-line for assessment and further selection of tasks for training.

Self Assessment: Although assessment is being discussed as concerned with children, it may be useful to consider self-assessment by the teacher/clinician. This is a complicated and unexplored area of enquiry. Aspects that are frequently considered arethe kind of questionning strategies teachers use, the kind of language environment is created for the children to learn. These aspects are largely unexplored and a rough estimation of framework would be necessary for a more qualitative work.

This assessment is expected to provide an overall picture of the child's language abilities and also enable the professional to select appropriate intervention steps.

CHECKLIST FOR OBSERVATION OF VERBAL COMMUNICATION SKILLS:

Name : Age/Sex Regn. No. Date:

Instructions : Write the specific response of the child

I. MODES OF COMMUNICATION:

1. Eye contact
2. Manual gestures.
3. Conversation
4. Reading.
5. Mixing gestures with few words

II. RECEPTIVE LANGUAGE SKILLS :

1. Turning head towards the sources of sound.
2. Responding to his name
3. Response on hearing 'no' or 'stop'
4. Response to simple instructions like 'look at me' with 2-3 seconds eye contact.
5. Response to simple requests like 'give me the ball'.
6. Response to simple instructions such as 'come here'.
7. Listening to a story for 3 minutes.
8. Pointing to 15 common objects like chappal, pencil, shirt, light etc. upon request.
9. Response when others make non verbal gestures such as frowning, crying, smiling etc.
10. Following 2 step directions such as give me the 'pen and switch on the light'.
11. Identifying 3 colours in a group of colours When named.
12. Answering simple questions, after listeningto a simple story.

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III. EXPRESSIVE LANGUAGE SKILLS :

1. Making vocal sounds.
2. Using voice sounds to get attention.
3. Indication of 'yes' or 'no' responses to questions such as do you want a biscuit ?
4. Imitation of few words heard.
5. Using simple words to indicate his needs such as food.
6. Naming of 5 body parts when asked.
7. Name of 10 common objects when asked.
8. Using 2 word phrases such as 'give food', 'amma came'.
9. Using simple sentences such as I want the toy'.
10. Asking simple questions like what´is this ? Why can't I.
11. Using pronouns such as I, you, mine etc.
12. Carrying on a simple meaningful conversation for 5 minutes.
13. Telling a simple story meaningful conversation for 5 minutes.
14. Telling simple jokes.

IV. OTHER ASPECTS OF SPEECH :

1. Clarity of speech
2. The sounds the child seems to have problems with while speaking.
3. Movement of tongue ?
4. Movement ofthe lips ?
5. Conversation : (indiffrent/No speech/unclear/gestural/ echolalic/sensible).
6. Any other.

...

BEHAVIOUR MODIFICATION FOR MANAGEMENT OF PROBLEMATIC BEHAVIOUR IN MENTALLY RETARDED CHILDREN

Mentally retarded children are known to present many undesirable and problematic behaviours on account of their skill deficits, limited ability at coping with environmental demands and sometimes mismanagement by their caretakers. Behaviour Modification is a problem solving approach for increasing desirable behaviours and decreasing problematic behaviours in mentally retarded children.

Behaviour Modification is defined as the systematic application of learning principles for changing behaviour. Behaviour Modification is based on the premise that all behaviours disorders are learnt and hence can be unlearnt. It emphasizeson overt and measurable rather than underlying behaviour causes. It is derived from the principles of operant conditioning, the fundamental assumption of which is that behaviour is a function of its consequences. It mainly focuses on environmental variables which control and produce changes in behaviour.

Behaviour Modification uses a wide range of techniques based on reinforcement, punishment, extinction, stimulus control, modelling and other learning procedures.

Most often problematic behaviours emitted by mentally retarded persons like hitting, clinging, screaming, scratching, pulling hair or biting, interfers in their learning new skills and management of these problems is very important.

Generally 3 aspects of behaviour are considered before being labelled as maladaptive or problematic.

1. Frequency (How often the problem occurs)
2. Duration (How long it occurs) and
3. Severity (How intense is the problem)

Behaviours may be problematic because they occur in an undesirable social context as for eg. a five year old child urinates inside the house instead of outside the house. Behaviours may be problematic when they are harmful to the child or to others.

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The Adaptive Behaviour scale from The American Association of Mental Deficiency (AAMD part II) classifies these behaviour disorders into thirteen categories.

1. Violent and destructive behaviour
2. anti-social behaviour
3. rebellious behaviour
4. untrustworthy behaviour
5. withdrawn
6. stereotyped behaviour & odd mannerisms
7. inappropriate inter-personal manners
8. unacceptable vocal habits
9. unacceptable eccentric habits
10. self-abusive behaviour
11. Hyperactive tendencies
12. Sexually abberent behaviour
13. Psychological disturbances.

There are essentially five main steps in implementing a Behaviour Modification programme for problematic and deficit behaviours.

I. Identifying problems
II. Defining target behaviours or behavioural objectives
III. Baseline recording
IV. Functional analysis
V. Treatment procedures and their evaluation.

Behaviour Modification approach is a self-correcting approach, problems are clearly defined, data are gathered before and during the treatment programme, are success or failure is made self-evident and corrective measures are taken.

I. IDENTIFYING THE PROBLEMS: It is the parent, the teacher or guardian who will complain about the child's behaviour. A good objective description of the child's problems are elicited. The use of behaviour checklists (AAMD scale) is advantageous in identifying problem behaviours. The first task of the therapist is to obtain a list of problem behaviours shown by the mentally retarded person. The problems exhibited by the mentally retarded children may be the absence of adaptive behaviour like sensory motor skills, language and communication skills, self-help skills or social skills or problematic behaviour like crying, wandering or head banging.

II. DEFINING TARGET BEHAVIOURS INVOLVES :-

1. The behaviour in which the informants describe must be defined in observable, objective and measurable terms, for eg. inferential words such as aggressive, disobedient, hyperactive should be avoided. The therapist has to elicit detailed observable behaviours from the informants instead of general terms like temper tantrum the meaning of which may vary from one parent who considers non-compliance to a request as a tantrum to another who reserves the label to a full blown outburst of screaming, hitting, pulling and throwing things around.
2. A heirarchy of problem behaviours emitted by the child depending upon the seriousness of the problem or the need of the child has to be decided upon.

3. Selecting targets: The goals of treatment has to be clear, hence the target behaviours to be modified first are selected. Attempts to manage all the child problems simultaneously may be unsuccessful. One or two or three problem behaviours may be handled first according to the heirarchy.

III. BASELING RECORDING : Recording of behaviour and maintaining baseline data is very essential in behaviour modification. It monitors change in the target behaviours as well as evaluates the effectiveness of the therapeutic strategies. Target behaviours should be recorded continuously before and throughout the therapeutic intervention.

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1. Frequency recording: The target behaviour that has been defined has to be counted every time it occurs. Tally marks may be made to record frequency.

2. Duration recording: This is a more sensitive measure than frequency recording. How long the target behaviours last are noted, for eg: crying behaviour or 'on seat' behaviour in the class room.

3. Interval Recording: The total length of observation is divided into equal intervals and it is noted whether the target behaviour occurel at all during each interval. This gives an indication of both the frequency and duration of the observed behaviour as well as sequence of events. But continuous recording is difficult and precise measurement of frequency and duration is not possible in this method.

4. Time sampling: Because of the difficulties in continuous recording, time sampling of target behaviours becomes desirable. One way of sampling is to observe the client at the end of a particular pre-determined interval. The length interval will depend on the frequency of the target behaviour as well as the time at the disposal of the behaviour.

IV. FUNCTIONAL ANALYSIS: The relation between a behaviour and its immediate social environment is analysed. Functional analysis identifies those aspects in the environment which maintain a problem or those which prevent a more adaptive behaviour emerging. In brief, Functional Analysis involves a systematic enquiry into ABC as follows.

A) Antecedents or events immediately before the behaviour and environmental setting in which it occurs

B) Behaviour its frequency, duration and intensity.

C) Consequences or events following behaviour.

This information is derived on the basis of interviews with parents and other significant members. Both problematic and deficit behaviours are enquired into. In addition, the parents are asked in detail what the child has already achieved (Behaviour assets) to focus their attention on child's unnoticed positive behaviours. The child's likes (reinforcers) and dislikes (punishing stimuli) have to be elicited during functional analysis and this is called as reinforcer analysis.

Environmental consequences like inconsistency in disciplining the child can be just as harmful as excessive punishment or permissiveness in parents.

BEHAVIOURAL PROCEDURES FOR MANAGEMENT :

After recording the baseline measures and analysing the antecedents and consequences of behaviour, the behaviour management has to be planned. Therapeutic procedures may involve either changing consequences or changing antecedents.

The techniques which have been found to be useful in decreasing undesirable behaviours can be classified as follows :

A) Restructuring the environment
B) Extinction
C) Punishment techniques such as time-out, response cost and restitution.
D) Differential Reinforcement.

Generally all these techniques are used in combination for instance, restructuring the environment and differential reinforcement or punishment and differential reinforcement. There are no specific indications for using particular techniques for particular inappropriate behaviour. The appropriate techniques have to selected depending on the individual needs and the functional analysis of the antecedents and consequences.

A. Restructuring the environment : The occurence of behaviour is in part of function of its present and past antecedents. This is called as 'stimulus control'. For instance if a child is very distractible in the class room and talks to his peers spending little time "on task" then one way of reducing his "off task" behaviour isto isolate him or place a screen around him and reduce distracting stimulation in the class room situation. Thus if is clear during functional analysis that the problem behaviour occurs only in one environmental setting and not in others, then restructuring the environment will reduce the likelihood of the target behaviour. Restructuring the environment has to be combined with a programme of positive reinforcement of appropriate bahaviours in the new situation and with holding of reinforcement if the maladaptive bahaviour occurs in the new situation. (Differential Reinforcement)

B. Extinction : It is possible to reduce the frequency of a behaviour by not presenting the usually occuring pleasant consequences. This process is called extinction. For e.g. in a case of a 8 years old boy persistent tantrum of loud screaming usually occured when he was asked to read, which he disliked and resulted in the teachers abandoning the task with him. The functional analysis suggested that the boy's tantrum were being reinforced by being allowed to escape from distasteful tasks consequent to his screaming. The extinction programme for him involved non-presentation of the reinforcement contingent on screaming i.e. continuing to make him read dispite the tantrum.

C. Punishment : This means introducing consequence for a bahaviour that reduces the future probability of that bahaviour. Punishing stimuli may vary for a particular child in a particular situation and its effectiveness will only be evident after using it. The common types of punishment procedures are :

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1. time-out
2. response cost
3. over-correction
4. restraint
5. aversion.

Time-out : This is short means time-out from positive reinforcement. When bahaviour problems are hazardous or self injurious, extinction may be undesirable, so punishment procedures like time-out are used. Time-out is used in various ways. If the reinforcer concerned is praise or social attention, time-out involves a short period of isolation. When the target bahaviour is problematic meal-time bahaviours, time-out involves either removal of the meal from the child for a short time or removal ofthe child from the meal. Time-out could be used in any situation where reward is being presented, which is removed during the occurence of undesirable behaviour. When unsure about the period of time-out to employ it is advisable to begin with short periods and then if necessary to increase the duration to several minutes, rather than the reverse.

Response cost : This procedure is used with individuals who are on token programmes for teaching adaptive bahaviours. When undesirable bahaviour occurs, a fixed number of tokens, stars or points are deducted from what the individual has earned. This procedure can be used as punishment for aggression, abusive language and late-coming during work or in the class room.

Over-correction : This involves two separate procedures 1. Restitution and 2. Positive practise. For most undesirable bahaviours, both procedures may be used but in some as for eg. self-stimulatory behaviours it is only possible to use positive practise. Restitution means restoring the disturbed environment to more than normal condition and positive practise involves practising appropriate modes of responding in situations in which the individual normally misbahaves. For eg. if a child keeps eating indiscriminately whatever rubbish he finds on the ground (Pica) restitutional over-correction would involve a prolonged period (15 minutes) of teeth, mouth and hand washing with soap or antiseptic contingent on the bahaviour and positive practise which is done usually after restitution involves a prolonged practise (15 minutes) of appropriate ways of handling rubbish like sweeping, mopping, throwing out the garbage, etc.

Restraint : Physical restraint has been effective in reducing undesirable bahaviours particularly physical aggression and self-injurious behaviour. The restraint can vary accordingly tothe individual. It could mean a restraining chair, holding the child's arms down tightly to his side for a short period, holding the child's head tightly between the trainer's palms or keeping the child's head between his knees etc. Sometimes a emphatic 'no' procedes the restraint which is tying the hands together for few minutes for hitting bahaviours.

Aversion : This method is generally used only when all other training methods have failed to control undesirable behaviours which are life threatening or self-injurious as for eg. severe head-banging, persistent vommiting and biting bahaviours. Faradic Aversion (battery operated mild shock) is administered immediately after the undesirable behaviour.

Contingent aversive chemical stimuli like strong pungent odours (amonia) sour or bitter tasting substances can be presented instead of shock in young children.

All punishment strategies in general should be used in combination with a Differential Reinforcement programme for concurrently rewarding desirable bahaviours.

Differential Reinforcement : Differential Reinforcement programme involves positive reinforcement for the 1. occurence of appropriate bahaviours specified in advance (DRA) 2. absence of the undesirable target bahaviour for a specified period oftime (DRO) 3. occurance of behaviours which are incompatible with the target behaviour to be reduced (DRI) 4. the occurence of low rates of the undesirable target behaviour being recorded (DRL).

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Differential Reinforcement of adaptive and desirable bahaviours should always be added when any punishment procedure is being used for decreasing undesirable bahaviour. Very often these problem bahaviours are maintained because ofthe lack of adaptive bahaviours and skill deficits.

Reinforcement is defined as any event which when following a behaviour strengthen the probability or the frequency of that bahaviour's occurence. Reinforcer does not always mean 'something nice' or 'pleasant'. It is any event which increases the probability of a particular bahaviour.

There are three types of reinforcers.

1. Primary reinforcer : These are reinforcers which are essential for life eg. food, drink, sleep etc.

2. Secondary reinforcers : These are events or objects which have acquired the property of a reinforcer because of pairing with a primary reinforcer. Example-money, points etc.

3. Social reinforcers : These are the events which have significance at the emotional level eg. attention, praise, smile, hugging and so on.

Secondary or social reinforcers are more convenient, easily available, acceptable and less subject to satiation compared to primary reinforcers. In the case of severely retarded children primary reinforcers are more effective than other reinforcers.

Methods of selecting reinforcers:

1. Ask the individual directly.
2. Ask the parents, siblings or the caretakers.
3. If the above two methods are not useful, offer a variety of reinforcers like food or drinks to the child and see what he selects more often. (Indirect preference technique).

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4. In children who have no particular preferences, observe the child and see what he does most often. Then use this preferred, high frequency activity as a reinforcement for eg. wandering 'off seat' behaviour or stereotyped behaviour.

Presentation of reinforcers:

Four important aspects should be followed while presenting reinforcement.

1. Contingency : Reinforcement should be given only when the desired behaviour occurs.

2. Immediacy : Reinforcement should be given soon after the desired behaviour occurs.

3. Consistency : The behaviour should be reinforced everytime. It occurs, especially during the initial stages of a training programme.

4. Clarity : The child should be clearly aware that reinforcement has been given.

Schedules of Reinforcement :

Reinforcement may be given following every appropriate response. This is a continuous schedule of reinforcement. On an intermittent schedule the reinforcement is given following certain responses only. The first type is effective in establishing new behaviours. However, the second one is more natural and resistent to extinction. Reinforcement programme must be planned in advance and strictly followed for the desired results.

Types of schedules :

There are four types of schedules of intermittent reinforcement.

1. Reinforcement can be given following a certain number of responses.This is fixed ratio schedule.

2. Reinforcement can be given after a few number of responses which can vary. This is variable ratio schedule.

3. Reinforcement can be given after specified lapse of time every 15 seconds. This is fixed interval schedule.

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d. Reinforcement can be given at varying intervals of time at the end of 15 sec. or 20 sec. or 10 sec. This is variable interval schedule.

Use of different reinforcement schedules results in different responses. Variable ratio and variable interval schedules produce greater resistance to extinction than fixed schedules but they are more difficult to deliver systematically and accurately.

TECHNIQUES FOR INCREASING DESIRABLE BEHAVIOURS :

TOKEN PROGRAMME : Tokens are one form of generalized reinforcers like money or points. They represent the possibility of obtaining something which the child likes. So they act as reinforcers. For example, while teaching the names of common objects to a child, give him a plastic star (token) when ever he responds. He can exchange these tokens for money or food later. Plastic money, coloured stars, ticks or crosses in a token card, points, tickets etc. can be used as tokens. Token programmes have an important role to play in training the persons with mild and moderate mental retardation.

SHAPING : Shaping is a technique which is used in building up a new behaviour especially with severely retarded persons. In shaping the components of a particular skill, the behaviour is REINFORCED STEP BY STEP. The therapist starts shaping by reinforcing the existing behaviour. Once it is established, he reinforces the responses which are closest to the desired behaviour and ignores the other responses. For example, to establish eye to eye contact, the therapist sits opposite the person and reinforces him even if he moves his upper body towards him. Once this is established he reinforces the person's head movement in his direction and this procedure continues till eye to eye contact is established. Shaping can be a very lengthy procedure. The therapist can train the person to get a desired response or restructure the environment to produce the desired behaviour.

PROMPTING : Here the therapist initially PHYSICALLY GUIDES THE person to look at him by turning his head towards him. This is then reinforced. Prompting can be effectively used in teaching self-help skills. It speeds up the acquisition of new skills.

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CUEING : While the therapist physically guides the person to look at him he says, "Prabhat, look at me". This serves as a cue to the child. Later just by telling him to look at the therapist he looks up. Gestural cues, visual cues and prompting are effectively used in language training.

FADING : Fading is always used along with prompting and cueing. Once the person learns to do something, the therapist gradually fades out prompting and cueing.

ALTERING THE ENVIRONMENT AND GRADED CHANGE : Sometimes to get a response from the child thetherapist may have to change the environment. Consider a situation where a child does not drink from a cup but iswilling todrink only from a spoon. This is corrected over a period of several weeks, by deepening the spoon for drinking andshortening its handle to make it look more and more like a cup.

CHAINING : Chaining isused when a person fails to perform a complex.task. The complex task is broken into a number of small steps and each step is taught to the child. This is the basis of chaining technique. The person is trained to master a chain of behaviours. Chaining technique is particularly used in teaching self-help skills. In forward chaining one starts with the first step, goes on to the second step, then to the third and so on. In backward chaining one starts with the last step and goes on to the next step in a backward fashion. Backward chaining is found to be more efficient in training the mentally retarded children. The latter steps themselves act as a secondary reinforcers to the person to carry out the earlier steps.

All the self-help skills can be taught to the mentally handicapped persons using the techniques ofprompting, cueing, fading, chaining and shaping. Each skill should be task analysed and the steps meticulously followed in combination with the techniques described. The use of a particular technique depends upon the nature of training to be imparted.

IMITATION : Imitation is a process by which new behaviours are learnt. Children imitate the behaviour of their parents and teachers. In normal children, imitation is a natural event. Mentally retarded children often lack it. If prompting is needed in addition to imitation, the therapist can have an assistant to prompt the child. In imitation, the model also should be reinforced for the response to indicate to the child that the reinforcement occurs after the correct response. Peer models are found to be better imitated than other models. Some children tend to imitate adult models. So the choice of the model depends on the child.

GENERALISATION: If a behaviour taught in a particular place is exhibited in other places also then we say that generalisation has taken place. In retarded persons, generalisation is observed to be a slow process and the appearance of a particular desired response may be situation specific. So efforts to generalise the skills learnt should be part of behaviour modification programme. The presence of child's mother during training session or teaching in an environment similar to the home/natural setting would minimise the problems of generalisation.

DISCRIMINATION : In discrimination training the mentally retarded person is taught the specific environmental conditions in which a particular behaviour is appropriate. Mentally retarded persons often have poor ability to discriminate situations. The technique of differential reinforcement is used to achieve the ability to discriminate. Only the correct responses in a particular situation are reinforced and the incorrect once are punished. The person has to be tau the specific stimuli associated with a particular response. In increasing speech in a retarded boy answering questions in class will be reinforced but not talking to classmates.

The reinforcement techniques of prompting, cueing, fading, discrimination training and imitation can be effectively used in language training. For example, to teach a child spontaneous naming of objects, the therapist takes an object such as a ball and asks the child "What is this"? and immediately gives a verbal prompt as 'Ball'. Gradually the verbal prompts are 'faded' in a sequence as Ball, Ba-. and B-. The child is asked to supply the missing sounds. The child is reinforced every time he makes an attempt initially. Gradually the reinforcement can be changed into an intermittent schedule. Careful assessment is needed to decide the effective reinforcer in language training. Since language is essentially a social skill, teaching the subject to respond to social rewards is the best reinforcement. If it is ineffective, alternate reinforcement should be tried out and they should be faded out gradually.

All the techniques mentioned for increasing desirable behaviours are always used in combination in teaching new skills to mentally retarded persons.

Source : NIMH Publications.

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Occupational Therapy for Mentally Retarded

The aim of occupational therapy is through careful assesment of the problem and the use of appropriate situation and activities help the person, (1) to recover or to develop competence in the physical, psychological, social and economic aspects of his life, (2) competence to communicate, to make personal adaptations and relationships, (3) to become adequate or proficient in work and recreation, (4) competence to take his appropriate place in life in a fitting manner.

In early years, the doctor himself was prescribing occupational therapy. Later a separate cadre of experts were trained to be occupational therapists. Today, an occupational therapist is a trained specialist, who, through a study and practical methods of ability assessment, together with an analysis of the elements of a number of activities and their value in rehabilitation, guides the occupational treatment to a person referred to him.

Occupational therapy for mentally retarded :

Occupational therapy for the mentally handicapped requires a different approach, with the aim to develop latent potentials and capabilities and to provide social education which will enable them to take their place in unfamiliar surroundings with confidence.

Important aspects of occupational therapy for mentally retarded persons is not the type but the degree of mental retardation and associated physical disabilities. These factors determine the plan of therapy and prognosis. Occupational therapy with mentally retarded are on fairly long term basis. The programme of therapy must be considered for each mentally retarded person separately. The psychological needs of the mentally retarded persor and the practical necessity should be taken into consideration while planning.

Occupational therapy for profoundly retarded :

Most of the mentally retarded belonging to this category are unemploymable in any constructive capacity and are largely entirely dependent u on nursing care for continued existence. In appearance they may exhibit many kinds of gross physical abnormalities or may appear normal.

Occupational therapy for such mentally retarded persons must aim

1. Prevention of deterioration
2. Assist in habit training routine
3. Encourages proposeful activity and lessen dependence

Cont... ...P/2.

4. Train to reduce habits harmful to themselves such as tearing clothes, picking skin, pulling, etc.., T achieve these, their attention must be held and purposeful coordinated activities must be stimulated. The occupational therapy programme should include adherence to routine in habit training, daily physical activities, carefully planned activities and persistent individual training.

Occupational therapy for severely retarded:

Majority of persons in the group are often partially dependent on self help skills and have speech restricted to simple words. Occupational therapy for the group should include

a. Stimulation for purposeful cooridnated movement.
b. Training to increase concentration
c. Assessment of employment possibilities
d. Exploration of possibility of developing useful employment techniques.
e. Opportunity for developing social competence.

Long term planning and routine are important for this group. A systematic plan should be made in the beginning. Each activity should be broken down to a simpler level. Verbal instructions are of little use and hence demonstration of a technique is very essential. Tactile sense must also be used in training to a large extent.

Simple forms of craft activities may be introduced with the following objects.

1. To improve concentration
2. To increase manual dexterity
3. To encourage methodical work habits
4. To instil the feeling of confidence
5. To help in the assessment of future employment potentials.

Many of the severely retarded are considered unemployable as they are slow in their work and cannot easily switch from one work process to another. However, there are some domestic skills that can be trained such as sweeping, dusting, carrying water, cleaning windows and doors and such unskilled repetitive activities. Employment for this group is generally not found feasible due to the maladaptive behaviour which most of them exhibit which leads to their inability to have appropriate social interaction.

There are indirect ways to improve their social competence and reducing dependence. This can be achieved through physical training, intensive training in self help skills and recreational activities.

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Occupational therapy for the moderately retarded :

The moderately retarded do not differ much in physical appearance but evidence of their immaturity manifests in their way of dressing and general behaviour. Some of the characteristic features of this group are temperamental instability and social inadequacy, which are the important contributory factors for their inability to remain in jobs. Many have little control over their emotions, become abusive or give way to outbrusts of temper and excitability or become dull and moody for little or no reason, irrespective of the surrounding. Their lack of foresight and ability to plan their lives and lack of sense of responsibility add to their problems from sustaining an occupation.

The Occupational therapy must aim towards training them in a semiskilled or unskilled job, training in appropriate work behaviour and work habits and achieving self sufficiency. Encouragement in care of personal appearance can help to improve self confidence. A planned and ordered routine combined with firmness and satisfactory group relationship is the most important foundation of their training.

The production of any kind of creative work provides an invaluable means of attaining this feeling of achievement and this should be encouraged.

To inculcate good work habits the key aspects are concentration, perseverance and consistency.

Concentration is dependent on the degree of interest present in the mentally retarded person and the distractions present in the work situation. Therefore, intially activities chosen should be presented in circumstances which do not contain distracting or irritating factors. There should be specified time periods allocated to each activity, and the mentally retarded person should not be allowed to change activity between the specified time periods.

To instil perseverance, initially the goal set should not be too difficult to achieve. By this the mentally retarded persons, when attaining the goal, gets a sense of achievement, which motivates him to work further.

Occupational therapy for the mildly retarded :-

There is a large percentage of the mentally retarded who resemble persons of normal intelligence in physical appearance. It is this group who escape the detections and in so doing are often forced into situations beyond their mental ability. They are often mildly retarded and will benefit considerably from specialised training for selective job placements.

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Specific. problems faced in giving occupational therapy for the mildly retarded are lack of understanding by the normal people around him/her due to the normal physical appearance and the behaviour not suited to the age. The occupational therapist should keep in mind that the mildly retarded person lacks initiative in his/her work and will lack the normal self confidence. Therefore it is important that he is made to feel secure until such time he can reach self assurance on his own accord.

The mildly retarded male adults are generally found capable of doing jobs such as assembly, packing, helping in gardening, dairy farm and poultry, helping in shops (errand boys), shoe shining, dish washing, helper on trucks, book binding, cleaners in restaurants, news paper distribution, car cleaners, helpers in laundering and in general as messenger/errand boys in all offices and industries.

The mildly retarded female adults are generally found capable of doing jobs such as working in factories,- sorting/assembling/packing/clipping/marking/dusting/moping, helper in house work, kitchen helper, helper in dress-making shop, simple sewing, laundering, messenger/ayah, etc.

The aim of occupational therapy for the mildly retarded should be geared towards specific assessment of occupational interest or aptitude of the retarded person and the training should be given in that area. Simultaneous training in social skills, such as, discipline, good manners, work routine and work behaviour and other necessary skills for appropriate social interaction should be imparted. In addition, functional academics required for daily living, such as signing names, reading sign boards, posters and notices, filling up application forms, seeing time and managing money are essential skills to be developed.

Occupational therapy for mentally retarded person with multiple handicaps :-

Every effort should be made to correct the physical defects that are remediable before boys and girls leave school to go to work. It is difficult for employers to release workers to keep appointments with dentists and opthalmologists. Studies have shown that the mentally handicapped have a much larger percentage of physical defects than is reported for normal youth. Hence it is essential to correct the remediable physical handicaps in a mentally retarded person, like fitting glasses, braces or hearing aids. Kind of vocation chosen should take into account the physical disability of the person also eg., the suitable

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job for a retarded person with lower limbs affected may be that of assembling or packing rather than that of a messenger, on the other hand the messenger job may be more appropriate for a retarded person with partial visual impairment . However, it is necessary to keep in mind the vocational aptitude of the retarded person while choosing the job.

Occupational therapy for persons with cerebral palsy and mental retardation:-

Those mentally retarded persons with cerebral palsy have a wide variety of concomittant defects. They have motor disturbances and noncoordination of various degrees of severity other than motor paralysis and decreased intellectual efficiency. The other defects commonly found among persons with cerebral palsy are epileptic seizures, visual defects, speech disorders and/or hearing impairment. The training and subsequent rehabilitation programme should be aimed at using the abilities. It is probable that physical thepapy and training for such persons will lead to self-sufficiency in daily living. Depending on the severity of mental and physical deficiency, the occupational therapy programme has to be planned. Certain adaptations may have to be made in the material used for giving occupational therapy to a person with cerebral palsy. For instance, a pen used by a person with cerebral palsy should have fixtures so as to enable him/her have a proper grip, while writing. Likewise, typewriters, painting brushes, feeding spoons and so on need to be adapted to suit their requirements.

Program planning in occupational thefapy:-

Analysing activities and planning appropriate programmes are essential in order to relate to the functional and personal need of the mentally retarded person. For doing that the occupational therapy should consider the following:-

i) Background of the mentally retarded person concerned, age, sex, severity level, social background, diagnosis, prognosis, any physical disabilities available, and interest.

ii) The environment - facilities available, equipment available, staff, nature of environment (rural, urban), etc.

The occupational therapist must be realistic in planning programmes and should ensure that the mentally retarded person achieves the maximum potential advantage. He should realise with the potential employer even before on the job training placement. He should indicate to them the work-

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plan of the mentally retarded person and the role of the work units staff in the initial day's of mentally retarded person's adjustment. It is also necessary to assess the demands of the job for the mentally retarded person and provide necessary guidance.

Recreational and leisure time activities :-

These provide fulfillment of many different needs, all of which contribute to a greater feeling of satisfaction and well-being. Those who are withdrawn have been known to participate during such activities as it brings about social interaction. People relate to each other and learn socially acceptable behaviour within the content of an activity such as waiting for turn, going by rules, being a loser and so on. New social roles can also be developed such as being a leader taking up organisational responsibilities. Self esteem is greatly enhanced and a sense of achievement may be gained from participating in group projects. Cognitive processes can be developed, using recreational and leisure time activities. For instance, many suffer from conditions that affect their memory, concentration and the attention span. Leisure time activities can help the restitution of these processes by involving in games or activities that require more use of them. Such activities may include simple table games which require little attention slowly building upto more difficult games, which require complex congnitive processes. Activities in which the mentally retarded person has some interest, should be given priority irrespective of occupational, therapists personal tests. Such activities must provide an avenue for fun and enjoyment as it can have a very potential therapeutic effect.

Maintaining contact with community resources is neceseary for organising effective leisure time and recreational activities. Visiting local museums, fun fares, parks, theatres, restaurants, etc. can help in learning social skills, money management and community awareness, besides being a recreation. Hobbies can also form recreational programme. The occupational therapists can offer one session each week within which he lets the mentally retarded person experiment with different kind of hobbies.

Through an appropriately planned occupational therapy programme which includes assessment, goal setting and programming; implementation of the programme and periodic monitoring a mentally retarded person can be made self sufficient to a great extent.

PARENTAL REACTIONS AND HOME BOUND PROGRAMMES FOR THE MENTALLY RETARDED PERSONS.

PARENTAL REACTIONS

Parental Reactions : Parents usually go through definite steps in dealing with the problems of a child with handicap. First they become aware of and recognise the basic problem. They then become occupied with trying to discover a cause and later begin to look for a cure. Acceptance is the last stage.

Denial : Parents who deny the existance of a child's handicap feel threatened. Their security is unsure and they are defending their egos for self-concepts. This is a difficult reaction for the professional to deal with. Time, patience and support will help the parents to see that much can be gained through helping children with handicaps realise their potentials.

Projection or Blame : A common reaction is to project blame for the situation on something or someone else.Often parent's statements begin with "if only". Again patience, willingness to listen to the parents and fact will help the professional deal with a potentially hostile situation.

Fear : The parents may not be acquainted with the cause of the characteristic of the handicapping condition. They may have misfounded suspician which causes anxiety or fear. Information in an amount that the parent can handle, is the best remedy for fear of the unknown. A positive communication process helps the professional to adjust the time for additional information to be added.

Guilt : Feeling guilty is a reaction that is difficult to deal with. The professional will help by encouraging guilt stricken parents to channelise their energise into more production activiti s after genuine communication has been established and continues relationship throughout.

Grief : Grief is a natural reaction to a situation that brings extreme pain or disappointment. Parents who have not been able to accept their child as a handicap may become grief stricken. In this case it is necessary to allow the parents to go through a healing process before they can learn about their child and how the child can develop.

Withdrawal : Being able to withdraw to collect one self is a healthy necessary action. It is when one begins to shunt others, avoid situation and maintain isolation that it becomes potentially demaging.

Rejection : There are many reasons for rejection and many ways of exhibting rejection. Some forms of rejection are failing to recognise positive attributes, setting unrealistic goals, escape by presenting a favourable impression to others while in-wardly rejecting the child.

Acceptance : Finally the reaction of the parents may be one of acceptance. This is the goal and realization of maturity. The parents and child can grow and develop into stronger, wiser, and more compassionate human beings.

Home Bound Programmes for the Mentally Retarded Persons:

The services and facilities for persons with mental retardation are growing in quality and quantity in our country. The number of professionally qualified persons working for the retarded individuals is on the increase and efforts are being made to reach out to the retarded population in the rural areas also. Inspite of efforts taken by the voluntary agencies and government organisations to set up special schools and other services, all the retarded individuals are not receiving professionals help due to the large number of the target population and limited resources such as funds, physical facilities and man-power.

In places where there are certain facilities available, limited number of retarded individuals are admitted, with restrictions for admission in age and severity level, thus catering to the needs of specific population.

As the nature, needs and potentials of the retarded persons vary from one to another, a large number cannot be trained simultaneously by one person. They need individual attention.

One way of extending training to a large number of retarded persons is through home bound programme. This programme is designed to provide direct instruction to parents or the family members for systematic training of their children at home.

ADVANTAGES:

- As the family members train the child at home, the learning occurs in a more natural environment for the child. Therefore, there is no need for transfer of what is learnt in the classroom situation.
- The one to one attention that is needed for the training is given by the family member.
- Generalization and maintence of learnt skills is more practical as they are taught by more familiar persons in the natural environment.
- In due course the parents and family members automatically learn to take the responsibility of their child as they learn skills to train the child.
- In the absence of sufficient number of professionals to train the retarded children, the home bound programme provided for reaching out to larger number of the target population.

Home bound instructional procedure:

Once a child is brought to a helping agency, a comprehensive assessment is made for his medical, psychological and educational functioning level. Parents role here is to give the various details regarding the history of the child as accurately as possible as this is an important information before assessment. Referrals to the speech, physio and occupational therapists are made wherever needed.

After assessment, the parents are informed of the child's condition and guidance given on the necessary steps to be taken.

The parent and the professional set priority goals forthe child. If the parents tend to have very high goals, the professional further guides them to select appropriate goals.

For the goals chosen, specific objectives are se cted. For the objectives chosen the teaching steps are delineated and the parents/home trainer are demonstrated on how the train the child. Arter the parents/home trai observe the professional the parents repeat the reaching steps with the child while the professional observes for accuracy. These steps are followed by the parents/home trainer at home for a specific period of time and again the professional and the parents meet to assess progress or problem in the child and necessary modifications ar made. If the skill is achieved, another skill in sequence is taught.

There may be a few variations in the above pattern, Sometimes the professional or the special educator can be itinerant visiting from family to family in specific peri and demonstrate training steps at home in the home settin Parents are expected to train the child in the specific st before the next visit of the professional.

More sophisticated approach is where the parents ar supplied with video tapes of training procedure for th parents to train at home.

Home-based training programme are very effective wit infant and early stimulation programme mainly involving activities for daily living and language skills. There needs to be more time and professional involvement when the child is at primary and pre-vocational levels. If the vocational skills also could be home based such as farming, dairy farm and poultry, the home-bound instruction can be effective with proper understanding and cooperation betwe the parents and the professionals. With the effective. learning environment and systematic teaching procedure development by them, the results of such a programme are promising in a developing country like India.

PLUS CURRICULUM

The curriculum of the visually impaired child is just the same as that of the normal child, but access to stimulated learning is different because of the restrictions imposed by blindness. The mode of inputs and outputs are changed. He has to depend on the senses other than the sight. As in the case of the normal child, he has also to learn through listening, reading and writing. He has to study mathematics, social studies, science, languages and other co-curricular subjects. To cope up with the handicap, the visually impaired child needs something more than his sighted peers. He has to learn certain additional skills which are peculiar to his blindness and this is termed as plus curriculum.

Besides the parents, the teacher has to play an important role. As he is not emotionally involved with the visually impaired child he can be more rational. He has been trained to teach the visually impaired child.

The teacher of visually impaired children has to cover the following areas :-

a) Use of low vision and low vision aids
b) Communication skills
c) Basic Orientation and Mobility skills
d) Special methods for concept development through various methods.
e) Prevocational skills.

1. Use of low vision aids :

The teacher should identify the students having residual vision. The exact amount of functional vision for each individual student is to be asserted. The visually impaired child should be encouraged to utilize his vision, however meagre it may be, the visually impaired child should be motivated to use magnifying glasses. In short, no opportunity should be lost in using the residual vision.

2. Listening :-

Listening is one of the most important skills to be developed by the visually impaired child. Distinguishing and discriminating meaningful sounds from subordinate noises is very important. The teacher has to develop this skill though a very careful planning. Listening is one of the important skill in effective orientation and

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mobibility. During the course of education, the visually impaired child depends more on recorded material than on brailled material. Talking book library and readers' service are important services for both coggenital and newly blinded individuals - N.I.V.H. (Deradun), N.A.B. (Bombay), B.M.A. (Ahemedabad), B.R.A. (Delhi) etc. provide such services to the visually impaired.

3. Braille Code and its formats :

The teacher should have the knowledge of "Bharati Braille" or its adaptation in any state language. He should also know "standard english braille, grade II". He should be able to prepare brailled material as and when nneeded. He should also know the braille code for mathematics, braille notations for science and music.

4. Tactual discrimination skills :

Tactual materials are natural learning modalities for visually impaired children. In the books for the sighted children, alongwith the printed matter pictures, diagrams, charts and graphs are given. In braille books they are omitted. The visually impaired children should not be denied of these. Embossed maps, three dimensional aids, relief maps, adopted mathematical equipments, raised line drawing are some of the few things to be used by them. The teacher should be able to produce and/or procure the same whenever and wherever available.

5, Special O & M Skills :

The most important skill in plus curriculum is O & M skill. Generally a specialist views this aim. But as a teacher of the visually impaired children, we need to develop some. The children are to be oriented within the class room and in and around the school building. We have to guide them in the school building. We have to guide them in the school compound and on the playground. Often we have to take them out for excursion. The teacher should learn to give special

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descriptions in terms of direction, faces, turns, slopes, ups and downs etc, in locating places or objects. He should have the capacity to translate visual maps or objects in to verbal description.

6. Social skills :-

Visually impaired individual can not make use of visual clues and body language; He can't visualize facial expressions, they should be told to them. They should be trained in personal grooming, socially accepted responses, etc. A human being acquires social skills throughout his life. The teacher can teach these skills easily which should be spread over throughout the period of schooling. A feedback should be a major aspect for alround development of a visually impaired child. He should be informed about the social situation and should be told what is expected from him.

They should helped in managing their affairs and handling their special equipments. The use of writing slate, taylor board, abacus, other geometrical devices, braille writer, tape recorder and even normal type writer together with other electrical equipments that are normally used in our home should be taught to them.

TEACHING OF READING AND WRITING OF BRAILLE :

A sighted child starts learning about himself in relation to his environment as soon as he is born. But a blind child learns by touching the materials around him.

Braille method of reading and writing was invented by Louis Braille. It is a tactile approach for visually impaired. It is nothing but the combination of raised dots in a cell. The cell consists of six dots which can be arranged in 63 combinations. The dots are arranged in a cell in two vertical lines and each line contains 3 dots. The braille system is classified as GradeI, Grade II, and Grade III levels.

In grade I, each letter of the braille word is specified. Grade I braille will be sufficient for those who do not have extensive reading in braille. It is just like primary level teaching.

In grade II, there is contraction. It is a normal form of reading braille. The braille books prescribed for school children usually contains Grade II contraction.

Grade III, system is the complicated form of the Grade II braille. It is a form of a "short hand system". It is difficult to understand on the part of a ordinary braille reader.

Braille Reading :

It is not difficult to read braille on the part of a reader if he is properly trained. For the beginners, it starts from six board, then peg board and then reading braille chart. The finger tips possess sensitive nerve endings which make touch reading possible. The light pressure on the raised dots gives the necessary information regarding position of the dots. To discriminate the position of the dots in a cell under one finger is difficult for the beginners. It needs extensive reading. For effective braille reading, a proper braille machanism needs to be developed.

Using both forefingers for braille reading is universally recommended for a beginner. Lightness of touch of dots are encouraged but movement of finger tips up and down is discouraged. Left hand should follow the right hand and move through the line.

Some children develop reading in different ways. Some use only the fore finger of the right hand for reading. Some use two forefingers keeping distance. Some place three or more fingers on the braille words. Some use fingers curving on the line while reading.

The visually impaired child after learning the position of the different dots of a cell should be given words to which he is familiar. The word may be the child's name. The words can be brailled and the child be asked to keep the fingers on the words and explore the words. The teacher should inform the child that the word represents his name. This gives him a familiarity with the spoken word and encourage the child to read more new words. After the child is well acquainted with words he should be given small sentences.

Braille writing :

Usually visually handicapped children are used to write in slate which consists of a wooden or plastic frame, a guide and by help of stylus they braille on the paper. While writing, the child has to punch the dots from the right to the left side of the slate. After writing, the child should reverse the paper and read it from left to write. Before writing, the child has to practice on the slate, the art of punching six dots in one cell. This practice is very important for the beginners. This encourages the child to punch the dots properly and the child feels confident. In order to write braille effectively, the child should possess the following skills.

1. Finger manipulation skills.
2. Fine motor co-ordination and control of muscles.
3. Competence to read familiar braille words.

In teaching braille writing, the easiest formation should be taught first. The child should be taught to write letters a, b, c, d, etc. with dot numbers. To develop speed in writing the left hand should always identify the braille cell while the right hand punches the letter in the previous cell. The stylus and the left hand should be placed on consecutive cells. Bu this the left hand assists the right hand which holds the stylus to identify the correct dot in the braille cell. While writing, the stylus should be held vertically.

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EDUCATIONAL INNOVATIONS FOR THE VISUALLY HANDICAPPED IN A TECHNOLOGICAL ERA

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ACCESS TO INFORMATION

A person receives about 80% information through his sense of sight. Loss of sight is a severe handicap. In education, it affects the majority of activities associated with learning both in or out of the classroom. A visually handicapped person has to rely on the enhanced use of auditory and tactile modes of communication to ensure that the widest possible curriculum is available, but many learning problems still remain.

Right to obtain information through all accessible channels is one of the recognised fundamental rights of all blind persons, as indeed of all citizens. In the age of science and technology, the fresh information is being generated at an exponential rate and it has become extremely difficult to face the information explosion. In order that a visually handicapped person should enjoy full participation and equality in every aspect of his life, it is imperative that information should be communicated in the form accessible to him.

Braille is established as an important communicatio medium for blind persons, but there are serious problems in producing it to meet all of the demands for study material. This is also true of tactile diagrams which ar very necessary in science and mathematics.

Communication problems are highlighted in the integrated schools and in higher education where blind students are required to submit scripts for teachers who may have little or no knowledge of braille. Public examin tions too present similar type of problems.

Recent developments in technology create the most promising possibilities for solving the problems of visually handicapped. In drawing together experiences of new technology among visually handicapped people, we refe to developments particularly in the areas of reading and writing, and the more recent problem of keeping abreast o the use of computers in education. The widespread use of computers in schools is likely to change teaching methods and to introduce new teaching materials, visually handica children could be further in a disadvantageous position. Since the design of systems is dominated by visual output, access to computers by blind people raises the question. how ? Fortunately, the inherent problem of using computers that are designed to produce visual output is being overc by alternative tactile or audio outputs.

TECHNOLOGICAL INNOVATIONS IN FOREIGN COUNTRIES

Information Technology has already made many contributions to the education of the visually handicapped students. Many devices now exist which give access to printed material and help to overcome the enormous task of producing braille in sufficient quantity to meet the demand for reading material.

Information can be accessible to them in tactile form through Braille printing, embossed literature, Braille teaching aid, three-dimensional 'touch and tell' exhibits, tactile image generator, optacon, etc. The partially-sighted can have access to information in visual form through low vision and magnification aids, closed circuit television, large print material, etc. Auditory form is the most important means to have access to information through talking books, talking computers, talking word processors, stereo cassette recorders, wireless, T.V. for blind, Kurzweil Reading Machine etc. Voice Indexing Device will allow random access to the pages of a talking book.

Modern electronic devices like Braille on magnetic cassette, Microbrailler, Digicassette, Sony Typerecorder, Braillex, Viewscan Text System etc. have been developed to provide effective communication media to the visually impaired. Developments in Information Technology like Online Computerised Databanks, British Aids Database, Technical Aids, Information Systems, Online Rehabilitation Database etc. have given a boost to visually impaired. A synthetic speech output for the blind has been developed whereby a microcomputer can speak to its operator, avoiding the need to translate print information into braille.

These devices are fascinating, futiristic and extreme useful but prohibitive in cost atleast for the blind individuals in this country. Even if import duty is waived, the vast majority of the disabled in our country living in desparate poverty cannot just afford the luxury of such sophisticated aids. It is, therefore, necessary to develop aids and appliances indigenously and from locally availabl material at low costs. Electronics have made great strides India and plenty of electronic devices are available. If adopted to suit the disabled, they could greatly help them in their daily activities. India has a well organised electronics industry. It is essential to mobilise the interest of this industry so as to produce aids and appliances useful for the education of the visually handicapped.

PROGRESS IN INDIA

Educational opportunities for the blind have existed. this country for almost a century. The first school for th blind was set up at Amritsar in 1887 followed by 3 more schools before the turn of the century. Today, India has around 250 institutions for the blind with an enrolment o somewhere between 15 to 20 thousand children and adults. The magnitude of blind population is so high that expansi of educational opportunities for the blind either in special schools or integrated schools without adequate technical aids is inconceivable. Thus many blind and partially sighted persons have to exist without any aids either because they cannot afford any or they donot know where to obtain them from.

The Centre for Biomedical Engineering at the Indian Institute of Technology, New Delhi was awarded a research project by the Department of Science and Technology to do a technological assessment of rehabilitation aids for the disabled in India. Mohan & Kothiyal (1984) compiled a "Guide to Aids and Appliances for the Visually Disabled" in January, 1984. In Section-I of this guide, there are 162 product entries under the following heads. Braille Duplication and Writers; Writing Aids; Braille Paper, Talking Books and Tape Recorders; Mobility; Low Vision Aids; Optical Aids; Educational Aids (Mathematical Geography); Teaching Aids; Intelligence Tests; Vocational Aids; Measurement, Clocks and Watches; Games and Puzzles, Sports; Kitchen Equipment, and Personal Devices. At the end of this section, a list of 40 manufacturers has been provided in alphabetical order. Information on aids available outside India was compiled from literature available in English language and this is presented in Section-II under the following heads: Low Vision Aids. Mobility Aids; Training and Vocational Aids, Educational Aids, Games, Sports and Recreation Aids; and Self Help/Personal Aids. Recently the National Rehabilitation Engineering Institute (NREI) has prepared a catalogue of aids and appliances for the blind. The NREI was set up by the Blind Men's Association, Ahmedab as a premier centre for manufacture and supply of almost a imaginable and newly developed aids, appliances and rehabilitation tools for the blind and orthopaedically handicapped. Datrange and Mokkapati (1986) have compiled a 'Indian Guide to Aids and Appliances for the Blind", there 151 product entries in the guide and the criterion for selection of a product is its availability in India and no the country of origin. National Institute for the Visually Handicapped (NIVH), Dehradun has also compiled an "Illustr catalogue of Aids and Appliances" in the year 1988. Punani Rawal (1993) have compiled a large number of aids and appliances for the visually handicapped alongwith brief description and the addresses of their availability.

For effective educational programmes any school requir trained teachers and suitable equipments to promote learnin Joshi (1981) conducted a study with the following objectiv (a) to obtain information about the status of Indian educational institutions for the blind pertaining to speci aids and appliances; and (b) to provide information about commonly used and available educational aids for the blind Goel (1985, 1986, 1987) discussed the communication media information technology in developing sophisticated aids fo the blind and also the possibility of its utilisation in t Indian context. In striving to teach science and mathemat most effectively to blind students at the minimum cost, Bhat (1982) suggests three criteria to follow for designing equipment and experiments: they must be multipurpose, creative and simple.

Tremendous progress has taken place in the development of educational aids in the West. With the help of science and technology very sophisticated and facinating aids have been developed recently, to minimise the limitations of blindness. We, in India, have not as yet even reached the stage of providing basic educational aids to our children. We cannot wait for decades to get highly sophisticated electronic aids. The author stresses the importance and urgency of providing the very basic aids and equipment and would like the scientists and technologists to come to our help in developing educational aids and other basic necessary items required every day in the classroom settings.

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PHYSICAL EDUCATION AND GAMES FOR THE VISUALLY HANDICAPPED

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Back Ground :

The blind people are handicapped with feebleness, awkwardness and helplessness, in addition to blindness. The vitality of the blind is much below the average vitality of the sighted and any system of education which does not recognise and try to over come that defect will be a failure. Even if a blind person is an accomplished scholar, a good musician, a skilled mechanic; no employer would apoint him if he is timid, awkward and helpless? Without confidence, courage and determination to go about freely in the world there is no chance of success for a blind person and that confidence and courage are given by the playground and gymnasium. Children with impaired vision have the same needs for physical activities as others. But the fact that they are unable to see normally does restrict their play activity to such an extent that they are noticeably retarded in their physical development. Inactivity can result in poor neuromuscular coordination and endurance posture may be poor because of lack of strength of postural muscles. Failure to participate in physical education programme contributes to the tendency to withdraw from society. Helen Keller must have had some of these things in mind when she said, "The curse of the blind is not blindness but idleness". Because the urges of a blind child to move and play are frustrated he often develops certain mannerisms, known as blindisms. These are physical movements through which he seeks to fulfil the need for muscular

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movement without moving about through space. Rocking back and forth, twitching of the head and jerking of the limbs are characteristics of blindisms. It is desirable to overcome these mannerisms. The aim of the special physical education programme is to help the student to achieve optimum physical, mental and social growth through a carefully planned programme of selected physical activities. To accomplish it the following objectives are set forth:-

a) Develop optimum physical fitness

b) Develop skills in the basic motor movements.

c) Develop a variety of sports skill for participation in sports as a worthy leisure time activity.

d) Develop a desire for continuous physical improvement.

e) Improve body image kinesthetic sense.

f) Promote an understanding in the student of the nature of his handicap and its limitation while emphasising the potentialities which may be developed.

g) Give a student a feeling of value and worth as an individual regardless of his handicap.

Physical education is today accepted as an essential part of education and has an important role to play in the welfare of the blind. There is lot of confusion in interpreting what physical education is and what its programme should be. Since most of the institutions are under private management, their financial resources are limited and only the very minimum of facilities are provided. Even schools with reasonable financial resources find it difficult to get open play grounds if they are situated in a city. A spacious playground is an essential part of a school, for no satisfactory programme of physical education can ever be carried out without outdoor space. The ground shall be well laid out with various areas planned for promoting variety of activities. As a safety precaution the play area should be free of non-essential equipment and unnecessary obstructions. For outdoor playing fields, hedges and shady tree are considered desirable boundaries rather than walls or fences which present a certain element of danger. Boundaries for games can be indicated by the in bound area composed of concrete and outbound area of sand or grass. Players will then be able to tell by foot sensitivity when they step out of bounds. To guide blind for outside running events, wires can be placed along the path of the runner to guide him. The runner will have some sort of warning at the finish line; a sort of auditory signal such as a whistle may be sounded. Very few schools possess a Gymnasium worth the name. Every school should possess a Gymnasium so that physical education programme can be conducted regularly throughout the year without being interfered by monsoon. Further certain activities are better adopted for indoor conditions. Apparatus is fixed under shady trees with the ground well levelled. It is not confortable to use them when the sun is strong. Lack of playgrounds naturally leads to inadequate equipment. It is also due to the non-availability of certain types of equipment which are not manufactured in India. The balls to be used by the blind should be larger in size and softer and they should be painted white or yellow to make them

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more easily seen by those with some vision. Bells or rattles inside the balls help to indicate location to the blind. One reason why ball games are not promoted in Indian schools for the blind is the non-availability of balls. The special balls like sound balls or bell balls are not easily available in India.

Game for Blind :

In some of the Institutions in India, the following games are available: (a) Playing cards, (b) Chess, (c) Cricket Ball, (d) Draghts Board, (e) Chinese Checker, (f) Puzzles, etc. The games are mainly indoor games and their adaptation for the use of the blind is easy. Both the blind and the sighted can play together the games like chess and cards which provide recreation as well as contact with people. Recently the Western world has started popularising sports like swimming, ball games, track and field events and wrestling. Regular sports help in rehabilitation and integration and are significant for the mobility of the blind. In India, cricket is becoming popular among the blind boys. The institutions should welcome their efforts and try to encourage them further for other suitable steps.

Nearly all the varieties of activities offered to normal children can be presented to blind children. Some require more adaptation than the others but the blind children enjoy and need participation in the same games, sports and physical activities. Dancing has value for the development of rhythm, timing and coordination and as a means of expression through movement. Swimming is high in recreational and safety values and is one of the best forms of total experience. Wrestling offers an unusual outlet for all-out performance of strength, speed, ability and endurance. Developmental and corrective exercises are of particular value because they provide a safe kind of vigorous activity in which improvement of body mechanisms and the development of strength, endurance and agility are readily available.

Physical Education Programme in a school can be divided into two parts: (a) Instruction period - Physical education within the time table & (b) Participation period-Physical education outside the time table.

(a) Instruction period is used to teach the activities as prescribed inthe syllabus. Physical education classes are included in the time table. Usually, two/three periods a week are allotted for lower classes and only one/two periods a week are allotted for higher classes.

(b) Participation period is usually after the regular classes. During this period students join in various activities at their option. During such participation they play games of their choice and get coaching for developing higher skills. To provide practically every student to participate in competitions a good intramural programme should be organised. There is some difference of opinion regarding participation by the blind in interscholastic athletics. There is no substantial evidence to indicate whether the values or evils which appear in the competitive sports programme for normal youngsters are greater or lesser for blind players. It would seeem desirable to provide the same opportunities for blind students. Competition may present a difficult problem as there will be few blind schools near enough to make travel feasible. Competition with regular schools in certain events can be conducted satisfactorily.

Physical education is a specialized field with its own techniques and levels. For the best results, it is therefore important that the teachers of physical education are appropriately trained. Qualified physical education teachers are available in some schools but they are not specially trained to teach the blind. In many schools class teachers who are good at games and, interested in games help in conducting play activities. Techniques of teaching may be defined as the special methods. The teacher uses to handle instructional problmes efficientlyand to deal effectively with the varied responses of different children. Teaching techniques and used by physical education teachers are of three general types, viz, verbalization, visualization and kinesthesis. Out of these only verbalization and kinesthesis can be used for the visually handicapped. Verbalization refers to the use of spoken word in the process of teaching. Describing a skill is an example of the use of this technique. The use of kinesthesis refers to the involvement of muscular activity in teaching learning situation. In a sense the adjustment a student makes when his muscular movements have not achieved satisfactory result is a phase of kinesthesis.

In view of the above it, therefore, becomes necessary to develop a special training programme to qualify a physical education teacher to teach physical education to blind children. Education and training is the manifestation of divinity and perfection which lie in human spirit and soul. Physical education is an education through physical activities for development of total personality of the individual to its fitness and perfection in body, mind and spirit. It has comonly been said that, "If wealth is lost, nothing is lost. If health is lost, something is lost. If character is lost, everything is lost". Physical education plays no less an important part than education in academic subject in the coordinated development of the personality of the child to make him a physically fit, mentally alert, emotionally sound and socially acceptable citizen. Physical education plays a vital role in modern life. Moral health depends on physical equilibrium. Physical education has an important influence on the development of personal character. It has helped to achieve physical, mental, social and moral qualities to develop the total personality of man, which is the ultimate aim of education. The aim of physical education is to provide skilled leadership, adequate facilities and ample time for affording maximum opportunities for individuals and groups to participate in situation that are physically wholesome, mentally stimulating and satisfying and socially sound. The aim of physical education is to maintain and improve health to loosen up and strengthen the muscles, improve physical resistance and turn a child into an agile and lively being. This can be categorised as:

1) Conservation of physical and emotional health;
2) Development of body, leading to the harmonious development of all organs;
3) Inculcation of qualities of endurance, patience, self-control, courage, etc. and;
4) Development of regular habits of work and pay with due emphasis on intellectual, moral and physical development.

Physical education is universally considered as an integral part of education because it contributes to the attainment of fundamental process, co-ethical character, worthy borne membership and good citizenship. It is that phase of education which has to do with the development and training of the whole individual through physical activities. "Practice makes a man perfect" is true when only practice is done inthe proper style of execution. Execution of skill in the proper style is important for achieving higher performances and satisfactory results. One of the prime factors to enjoy is mastery of skills. Skill is defined as the ability to perform. Performance of right type of activities leads to the following benefits:-

1) The heart and blood vessels operate more efficiently. The heart is able to pump more blood per contraction, thus doing more work with less effort.

2) The respiratory system functions more efficiently. Exchange of carbon dioxide and oxygen takes place more rapidly and vital capacity is increased.

3) The work capacity of the muscular system is increased making for greater endurance.

4) The central nervous system is trained to coordinate other systems effectively. Finally the general health is improved by proper exercise. Then it increases the individual's zeal and alertness, making him a more vibrant, efficient being.

Physical education gives practical training to the blind to become a fully trained person to take his right place in society and often brings the blind and the sighted together. A blind person does not differ from a sighted person as far as his mental structure is concerned. Physical activity is the best way to prevent blind individuals from getting isolated and lonely. The blind should be encouraged to find their way to the sighted and ultimately the sighted may want to learn or know the events that are typical of the visually handicapped. Physical activities and exercises are of particular importance to the blind because their possibilities to move around are limited if we compare them with the sighted. If the limitations of the blind are taken into consideration, many physical exercises can be modified according to the meeds of the blind. Pity and over-protection by the parents on account of lack of information have prevented many blind persons from participating in physical activities. As a result, the large trunk muscles and vital organs will not develop. Safety precautions should be given importance. Environment must be familiar to the participants in physical activities. All equipment and apparatus must be checked carefully and they should be taught carefully how to use them. Another important factor is that participants should be well informed about the apparatus they are going to use. Continuous coordination between physical education and health care is a must. The physical educator must follow the advice of the physiotherapist and dietician and the apply the exercises to the blind. The main objective of physical exercise and corrective therapy is physical restoration, and that's why physical education of the blind may be called "Physical rehabilitation of the blind".

Corrective Exercises:

Visually handicapped children can benefit from corrective exercises inposture, coordination, gait, etc. These children need to be engaged in elementary activities such as jumping from the bottom step of a flight, climbing stairs correctly, hopping, skipping, jumping upward and forward, running, etc. Without attaining mastery in these activities, the blind children may not be able to participate actively with more experienced sighted children of the same chronological age. These children then come to kindergarten or first grade at a lower level of readiness for physical education than their seeing peers. Since they can neither see themselves in mirrors nor they can see others to imitate, they need to be given necessary activities and active play experiences - walking jumping, climbing, rolling, hopping, etc. - so common to young children to strengthen muscles and produce tone.

Day School Programmes:

In day school programmes, the classes are of large size and the physical education teachers may hesitate to include a visually handicapped child lest he be injured. The resource room teacher should work out a cooperative arrangement with physical education teachers and with regular classroom teachers. In order to provide physical education for the visually handicapped and yet not put the school at a disadvantage, a mobility teacher might serve here as physical education teacher. Thus he combines his training in physical education and special education. He may divide his pupils into two or three homogeneous groups and then include sighted children to provide healthy integration.

Residential Programmes:

In a residential programme, classes are small, although a given group of children has its range of abilities and heterogeneity. Specialized equipment and adapted conditions make physical ac-tivity natural and pleasant. Rules of games and techniques of play can be modified - using a large ball instead of the standard size, rolling the ball instead of throwing it, using a guide wire in track events, etc. Teachers may have had some special education training in the area of the physically handicapped and be less fearful about active play for these children.

Physical Education and Recreation:

Physical education and recreation run in a parallel line rather than lying end to end. Physical education and recreation can be reasonably considered together because in actual living these two are not separable. Frequently physical education programmes fail, not because there are too few organized sports at school but rather because children, when not in school under the direction of the teacher or coach, either do not know how to use leisure time profitably or have no desire to be so engaged.

As far as family recreation is concerned; some activities, such as table games, reading, membership in clubs, spectator sports, etc. may be mentioned. Some of them are conducted singly, whereas others are best enjoyed in the company of friends, seeing or visually handicapped; Some pastimes are sedentary, while others are active and vigorous. Variety is the key to refreshing leisure - time pursuits.

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INTEGRATED EDUCATION OF THE VISUALLY HANDICAPPED

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1. IED Programme

We do not have accurate data of blind and visually Impaired Persons in our country but on the basis of several community surveys there are about 9 million blind and 45 million visually impaired persons in India. Besides, about one million cases are added every year.

With this
- high magnitude of visually handicapped population, lack of resources,
- limited number of special schools, financial constraints,
- shortage of trained manpower, etc., some alternative, strategy for education of VH children needs to be developed.

IED is one such alternative which is going to be very helpful in serving a large number of such children all over the country.

The Government of India initiated the scheme of IED in 1974 which was modified in 1981.

Hundred percent financial support from Central funds is available to all the States and Union Territories implementing this scheme.

The IED scheme is in operation in 14 States, including the Union Territory of Delhi. Most of the States/UTs implementing the scheme are still at the experimental stage. The programme is gaining momentum in pursuance of NPE 1986 which envisages education of disabled children in common Schools as far as possible. The programme has assumed further significance dueto the Nation's commitment to expedite universalization of elementary education in the seventh five year plan. The stage of implementation has been upper primary or secondary in most of the States/UTs. Pre-primary education is almost missing. Close interaction among the disabled and normal children in impressionable years promote understanding and appreciation of the assets and limitations of each other. Pre-School Education is the first-stepping stone in the life of every child, sighted or blind. The NAB-Mata Lachmi Nursery is one institution which admits children between 2 to 5 and follows the normal montessori course. The integration should start from the family, through immediate community and School to the world of work.

To ensure the benefits of IED programme, the administrator, who is obviously the Principal of a School of normal children, must be a qualified person andwell versed with the problems of visually handicapped children. Also the teachers must have knowledge about the assets and limitations of VH children. It is with this objective Government of India is planning to start B.Ed. (Special Education) so as to enable the teachers to implement IED programmes effectively.

The following broad criteria may be adopted by the administrator to run an effective IED programme.

2. ADMISSION OF VH CHILDREN

Before admitting any handicapped child, the administrator must ensure that the particular handicapped child has only one fiature of handicap and is not multiply handicapped. For instance if the child is blind, he should not have any additional handicap like deafness, etc., Secondly, the administrator must ensure, that the IQ of the handicapped child is at par with his normal counterpart.

3. AVAILABILITY OF INSTRUCTIONAL MATERIAL

The administrator and regular teachers must ensure that all specialized instruments of gadgets will be provided for the educational needs of the VH child. For instance, availability of text books in the braille script, tapes & cassette recorder, raised maps and diagrams, special equipment for reading and writing, three-dimensional aids, etc., must be made available to the blind child so that he may keep pace with the normal peers.

4. AN EFFECTIVE RESOURCE ROOM PROGRAMME

Before supplying the equipment and instructional material to the handicapped child, a Resource Room Teacher must be made available to teach the handicapped child to use these aids and equipments. Apart from imparting educational instruction to the handicapped child, the RT must be in constant touch with his parents for periodic guidance and counselling.

5. Coordination between Regular Teachers and Resource Teacher.

The regular teacher and the resource teacher share responsibility jointly. The resource teacher not only helps these children to learn special skills but also helps regular teachers, administrators and parents in understanding the abilities and disabilities of these children.

6. TEACHING AND LEARNING

The basic function of the eye is to collect visual information from the environment and transmit it to the brain. Sighted children receive about 85 to 90% information through their eyes. This input is denied to the blind. Blind children use other senses-primarily their ears and sense of touch. Thus through braille reading and writing, special auditory training, orientation and mobility training, they are able to receive education alongwith sighted children and thereby gain the same social attitudes, the same information and develop the same level of confidence.

A. Academic Standards

The teacher must maintain the same academic standards for all children. The same outcome can be expected. Occasionally, a lesson may be modified or substituted. With very young children, when text materials are highly or exclusively visual, a rare lesson may be omitted. However, these problems diminish as the child progresses through early standards.

B. Knowledge of Braille

A regular teacher will not require to learn braille in order to effectively integrate a braille reader into his class. However, if he is interested in learning, the RT will be happy to share this skill with him informally or even formally.

C. Carefulness about the usage of words

Does the regular teacher have to be careful about certain words he uses in the class ? Absolutely not. He can say, "Look at this", "Do you see what I mean" "Can't you see the meaning of that expression in the text ? etc. Be perfectly natural. A blind child is not a fragile thing, he must learn to interpret such expressions.

D. Usage of Special Techniques.

Does a regular classroom teacher use any special techniques in his teaching ? Probably not. One of the major responsibilities of the RT is to introduce complex concepts, unfamiliar page layouts, etc. in advance so that the blind child is prepared for regular teaching. RT will ensure that the blind child is comprehending fully. Some teachers place material on the blackboard without saying aloud simultaneously what they are writing, they find that blind child misses that information completely. A good teacher knows that a multisensory approach i.e. both writing on the board and saying what one is writing - is best to teach in integrated setting.

7. INTEGRATION AT THE SECONDARY LEVEL

Only academically bright students should be given the opportunity of integration at the secondary level.

Those students who have shown better skill in some trades other than academics, they should be given adequate opportunity to excel in their respective trade.

Unfortunately this is not being followed in our country. VH children with a mediocre academic performance are encouraged to go in for higher studies simply because scholarship to physically handicapped is available at a mere aggregate of 40% marks. As a result, such mediocre students get highly frustrated when they are unable to get gainful employment in the competitive world.

8. DEVELOPMENT OF PROGRAMME SUPPORT

The purpose of IED scheme must be explained to regular teachers, counsellors, social works, normal students, local and district supervisors and administrative personnel. The job of each person must be clearly understood. Successful integration can only develop when each person works in partnership.

9. IED PROGRAMMES IN THE RURAL AREAS

About 80% of blind children are living in rural areas. It is disheartening that all the IED programmes are available in urban areas. The handicapped have to leave their families and come to urban area. It is also disheartening that our trained personnel are not ready to serve in rural areas. Some package of incentives may encourage the RT to make IED programme a great success. The basic purpose of IED scheme is defeated if the handicapped have to leave their families and shift to urban areas for receiving educational facilities.

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AIDS AND EQUIPMENTS OF THE RESOURCE ROOM

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Our country has witnessed phenomenal expansion of educational opportunities in the post independent period. However, disabled children have not yet benefitted substantially.

The National Policy of Education 1986 is envisaging education on disabled children as far as possible in common schools. This policy has urged the need for stupendous developments in personnel, material, planning and management, etc.

Placement of handicapped children in the common Schools demands many supportive services, one of the major items being the instructional material.

It is true that most of the handicapped children can assimilate more than 80 percent of the regular classroom instruction when appropriate reading material is provided.

Moreover, learning will become more interesting and enterprising when appropriate instructional strategies are adopted by the classroom teacher.

A simple provision of facilities does not necessarily ensure effective implementation. Many regular teachers at all levels are perplexed about how to meet the responsibility of the growing numbers of disabled children entering regular classrooms.

The facilities for the training of special teachers are now available in the Regional Colleges of Education, Regional Training Centres being run by the

National Institutes for the Handicapped, Special Education Departments in the Universities and selected colleges of Education. The training facilities are being further expanded. The successful implementation of the IED depends upon the responsiveness of the administrators and general teachers in the School. Short-term Orientation Courses for administrators, heads of the institutions and general teachers associated with IED Scheme maybe organized. There should be a well equipped resource centre at the State Level. It will be utilized in conducting training courses for the resource teachers and for other programmes conducted at the State Level.

Following composite area planning approach (CAPA), IED models need to be developed. Planning of a package of services in a specified sector is termed as composite Area Planning Approach. The size of the Area is determined by the criterion of economic viability and geographical feasibility. Another dimension of the composite area planning refers to the comprehensive nature of the package of services like prevention of disability, identification and assessment of the disabled, educational provision and rehabilitation.

The composite area should be as small as possible for effective utilization of resources. It implies clustering of Schools in a specified area for special provision and sharing of the facilities. A higher secondary School may be considered to be the nucleus of the proposed network. More specialized facilities will be located in the Special Education Centre (SEC) in the nucleus School from where they can radiate to the composite area institutions. This centre is to be equipped as a resource centre with full time staff. Around each of such schools there are 2-3 middle and 6-8 Primary schools which are known as feeder schools.

Over 90% of the school going population has a primary school within a distance of 1.5 kilometres. Cluster children with one set of needs in one primary School and with another set of needs in another because primary Schbols are available in walking distance in all directions. Some of the moderate needs of the disabled children can be met by ordinary teacher through adaptation of teaching and managerial skills with training.

A resource teacher is needed for children with sensory deficits. Specialist consultants to the regular teacher (resource teacher) are beginning to appear in School systems in several countries. By providing supplementary assistance, more disabled children can be served by the regular classroom teacher. The goals of integrated education are essentially similar for both able and disabled students. But to achieve these educational goals, we need to provide resource teaching in integrated setting. The resource teacher directs and monitors the disabled children according to their requirements. The integration requires resource room facility. A resource room may be set up preferably in an existing room in the school. A new room may be built only where no accommodation is available to the satisfaction of the State Government. Grant shall be available for construction of resource room in School in such circumstances. Resource room will have essential equipment, learning aids and material.

It may be necessary to remove architectural barriers or to modify existing architectural facilities so as to provide easier access to disabled children to

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the School premises. Grant shall be available for this purpose for the schools where at least 10 handicapped children are enrolled.

Some core facilities can be provided in each of the institutions individually (i.e. in the Resource Room) and some on shared basis (i.e. in the Resource Centre). For example, blind child needs resouce facilities for learning braille, mobility and for sensitization of auditory and tactual sensations. The hearing impaired children need hearing aids to overcome the hearing loss. Resource teaching helps Orthopaedically handicapped children for developing better coordination of muscles for learning academic skills.

The mentally retarded children are helped to develop daily living skills and are given remedial teaching to cope with the normal children.

Some of the following aids may be useful in resource room:

1. Pegs

   Aims: To teach general awareness (number skill through play-way method).
2. Dominoes

   Aim: To teach colour concept
3. Sensorial Apparatus

   Aim: To teach size concept.
4. Matching Cards.

   Aim: To teach how to match various types of figures
5. Recreational Toys

   Aim: To teach motor ability
6. Geometrical shapes

   Aim: To teach shape concept

7. Mathematical Signs
   Aim. To teach number skills.

8. Model Clock
   Aim: To teach time concept

9. Alphabets/Digits.
   Aim: To teach the child pre-reading.

Thus resource teaching helps these children to grow better. Resource teaching is a pre-requisite of Integrated Education. There are three basic requirements of resource teaching.

i) Congenial environment-positive attitudes of parents, siblings, teachers and peers.

ii) adequately prepared instructional material for the child as well as for regular teachers in the resource room; and

iii) the cooperative child who is attentive and interested in teaching learning activities.

The Resource teacher not only helps these children to learn special skills but also helps regular teachers, administrators and parents in understanding the abilities and disabilities of these children. The Resource Teacher acts as a bridge between teachers and child; administrators & teachers; and parents and child.

Thus the resource teacher is the catalyst for making the programme a great success. The integrated programme can only be successful when the resource teacher is committed to his services and he gets all cooperation from team of professionals required for identification, placement and monitoring.

The resource teacher must have well equipped resource room. The costly items may be installed in the resource centre and shared by different users within the specified area but the less expensive ones may be used in every institution for the resource room.

The world over, tremendous progress has been made in developing aids, appliances and apparatus used in training, employment, recreation and convenience of the disabled. Electronics have made great strides and electronic devices are available in plenty. If adapted to suit the disabled, they could greatly help in their daily activities. It is essential to mobilise the interest of this industry so as to produce aids and appliances useful for all categories of the disabled. Various Guides/Catalogues/Technical Aids Information Systems/Databases have been developed for the disabled in India and abroad. Some of the important tools are given below.

Dinesh Mohan and K.P.Kothiyal of IIT, New Delhi complied a "Guide to Aids and Appliances for the Visually Disabled" in Journey, 1984. In Section I of this guide some relevant information about aids, appliances and equipment for the blind and the partially sighted has been included. In all there are 162 product entries. Major items of information are title, a brief description of the product, manufacturer's/Supplier's address and the price.

In this Section, the entries are made under the following heads:

Braille Duplication and Braille Writers.
Writing Aids
Braille Paper
Talking Books and Taper Recorders
Mobility
Low Vision Aids
Other Optical Aids
Educational Aids/Mathematical
Educational Aids/Geography
Teaching Aids
Intelligence Tests

Vocational Aids
Measurement
Clocks and Watches
Games and Puzzles
Sports
Kitchen Equipment
Personal Devices

At the end of this section, a list of 40 manufacturers/ suppliers with their addresses has been provided in alphabetic order for easy reference. Information on aids available outside India was compiled from literature available in the English Language and is presented in Section II. The National Rehabilitation Engineering Institute (NRE I) has recently prepared a catalogue of Aids, Appliances for the Blind and Orthopaedically Disabled. The NREI was set up by the BMA as a premier centre for manufacture and supply of almost all imaginable and newly developed aids, appliances, rehabilitation tools for the blind and the orthopaedically handicapped. Recently, NAB LBMRC has produced an "Indian Guide to Aids and Appliances for the Blind" and there are 151 product entries inthe Guide. A list of manufacturers and an uptodate price list have also been provided. British Aids Database is a useful information tool for comercially available aids for the disabled. EEC Technical Aids Information System for disabled persons has been developed by the European Economic community.

ABLEDATA - an online computerized databank of equipment and devices for disabled people has been initiated by National Rehabilitation Information Centre in collaboration with Californian Department of Rehabilitation. About 10,000 aids and devices for handicapped people are likely to be internationally available via computer terminals in the near future.

Rehabilitation Information Resource Directory and online Rehabilitation Database have been prepared at National Rehabilitation Information Centre, Washington. These information sources provide all materials relevant to the education and rehabilitation of all categories of disabled persons.

A Directory of "Special Devices for Hard of Hearing, Deaf and Deaf-Blind Persons" has been compiled by Hurvitz & Carmen of Veterans Administration Medical Centre, California. Some of the leading organizations like National Centre on Educational Media and Materials for the Handicapped, ohio; Educational Resource Information Centre (ERIC), Washington; Council for Exceptional Children (CEC), Virginia have developed very sophisticated aid and appliances for handicapped. In India also, some of the organizations like NIOH, NIVH, NISHH, NIMH, ALIMCO, AIIMS, NAB, NASEOH, etc. have taken a lead in developing aids & appliances for the handicapped persons.

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INSTRUCTIONAL RESOURCES

Instruction involves a number of factors like such as the teacher, the taught and the text through which the instructional objectives are to be achieved. Therefore, effective transaction of the texts are very important for successful teaching in the class. Hence the question arises should we have the same textual materials for normal as well as handicapped children ?

Textual Material for all students:

Instructional objectives and learning outcomes for both normal as well as handicapped children are similar in a classroom setting. Usually the text books are designed for the normal children. The text books as such can not be used by the handicapped children effectively. The textual materials used by the normal children are inadequate to achieve the instructional objectives by the handicapped children. They are also insufficient to bring learning outcomes of the handicapped children on par with normal children As a result of this, the material adaptations and adjustment instructional materials become inevitable in the educational process of handicapped children.

Textual materials for unique needs for child with special needs:

The learning experiences ordinarily planned for normal children may not be relevant and/or adequate for the children with special needs. They need different type of learning experiences according to their disabilities. Hence little modification of the content, method of display and response expectations are very essential for effective transaction of the texts. Here comes the concept of Adjustment Instructional Material. The adjustment material refers to special approaches and presentation styles required for providingoptimal learning experiences to the handicapped children in the regular classroom. It is the process of making necessary changes such as modiciation alteration, substitution compensation etc., without changing instructional objectives and learning outcomes. The adaptation may be in terms of teaching methodology, special approaches, teaching aids, presentation style, evaluation, enriching assignments etc. Children learn through various sense experiences like by seeing, hearing, touching and smelling etc. The handicapped children are deprived by one or more of these sense organs which limits their sense experiences consequently their learning is affected. Hence, multisensori approach has to be followed in order to compensate their limited sense experiences due to their disabilities, adjustment of instructional material and methodology is planned according to the need of the children belonging to various categories of handicaps. However, the adjustment is planned in various ways.

A. Adjustment of Instructional Material and Methodology without any change in Regular Classroom Teaching.

Simple modification of physical environment of the classroom enable the handicapped children to participate in classroom activities equally with normal children.

- Asking partially hearing child to sit on the front bench, so that he can hear better.
- Providing large print and magnifying glasses to help partially sighted.
- Braille script and slate can be provided to the blinds.
- Adjustable furniture enable the orthopaedically handicapped child to function normally.

B. Adjustment of Instructional Material for Hearing Impaired Children.

They generally have misarticulation problem. They commit spelling mistakes as they write in the way they speak, eg., 'tigr' for 'tiger'. The hearing impaired children require a wholistic perception for understanding concepts. Therefore some precautions have to be taken while adapting the materials and methods while teaching hearing impaired children.

Guide-line for adaptation:

- More of visual cues have to be provided to compensate hearing deficits.
- Models and charts have to be used more frequently for more clarity.

- For teaching emotional concepts, the teacher has to take the help of action oriented situations e.g., dramatize the expression of happiness and unhappiness, crying, shouting, etc.
- Hearing impaired children have more problem in learning language. The phonology, semantics and structure of a language should not be taught in isolation. If there is a problem in learning a particular component of language, then remedial adapted lesson should be planned e.g., use substitution table and structural approach.
- Role playing and dramatization help the hearing impaired to understand abstract concepts.
- Single word ~~x~~ question and answer method should be followed for oral participation of hearing impaired in IED class.
- The hearing impaired require supporting exercises for learning correct reading and writing skills, in the beginning.

C. Adjustment of Instructional Material and Methodology for Visually Impaired Children:

A lot of adjustment of instructional material and methodology is required in order to integrate the partially sighted and blind children. Partially sighted have to be provided with large print materials, magnifying glasses and adjustable furnitures. However, integration of completely blind needs learning the braille script and use of abacus.

Guidelines for adaptation:

- More of auditory and tactile aids should be used to compensate visual deficits.
- Three dimensional aids, embossed maps and charts should be used to concretise the abstract concepts.
- More of verbal cues should be provided while explaining concepts in the class.
- Compensatory aids like care for mobility, braille slate and stylus for learning to read and write

braille, abacus to learn numerical concepts and brailler to cope up with speed of taking dictation in general classroom.

- The teacher should avoid the use of instructions like 'see' 'look' etc. which needs use of vision.
- The resource teacher should be asked to prepare additional and supportive material in braille and large print.

D. Adjustment of Instructional Material and Methodology for Mentally Retarded Children:

Integration of mentally retarded children is more difficult than that of other blind and deaf children. Integration of Educable Mentally Retarded (EMR) is proposed only at the primary level. Moreover these children go to the school unidentified as having any problem as the disability is not obvious and can not be observed directly. Hence they need more careful observation and alertness by the parents and the teachers while dealing with them.

Guidelines for adaptation:

- Instructional material and methodology has to be adapted according to the development of cognitive abilities and muscular coordination.
- Adequate rest between the instructions has to be provided as the mentally retarded children have very short attention span. School time table should be flexible enough to adjust the periods of rest and play alongwith the instructions.
- The learning activities should be organized through games, physical activities, music which help to form permanent, impression on their minds.
- The teacher should follow a strict developmental sequence and task analysis for teaching basic skills.
- Sufficient drill and practice should be given to them because they need over learning forproper retention and implementation of the skills they learn.
- Activities requiring coordination of eye and hand movement.

- Activities which help attention and memory skills.
- Activities which improves linguistic competencies like, reading, writing, comprehension.
- Encourage children to choose learning activities of their own interest.
- Provide necessary aids and supportive materials to concretize the concepts.
- Help them to develop socially accepted behaviours.

E. Adjustment of Instructional Material and Methodology for Orthopaedically Handicapped Children:

These children can be taught in regular classroom as they are mentally just like normal children. They require some prosthetic aids and appliances and physiotherapy in order to compensate their disabilities. They do not require any adjustment of textual material or methodology rather some adaption of physical environment is essential.

- Seating arrangement should be such that their movement will not disturb the class.
- Children with lower limb problems, need crutches, wheel chairs, braces, hand rails,etc.
- Children with upper limb problems need to have their books fixed on lap boards, require pageturner, thick pens, pen holders for reading and writing purposes.
- As the child grows, the artificial limb or brace used need to changed. (They rarely fit for more than a year). Recommend help of a prothesist.
- The height of furniture used shouldbe adjusted so that it does not interfere with the function of prosthesis used.
- Postural habits should be observed so that children do not develop wrong postures.
- Children with health problem like athritis, cardiac diseases should not be given prolonged activities like writing.
- Normal children should be told not to tease the children or hide their prosthestic aids.

- Adapt physical exercises to provide proper muscular exercises.

LEARING DISABLED:

These children make some kind of mistakes repeatedly either in writing, reading or arithmetic.

- Give exercises to the child in identifying the letter or number, which he has difficulty in writing, speaking or recognizing.
- Give exercises which provide feedback of the same letter in different shapes, sizes and colours.
- Letters or words which resemble each other, either visually or auditorily should not be taught together.
- Sensory experience should be provided to copy letters correctly and verbalize differences. For example, on, no; saw and was.
- Ensure that the child is continually busy and interested in the task during teaching session.
- Give easier exercises first which the child can master.
- Learning tasks should be divided into small groups so that the child feels he has mastered the task.
- Give the child a paragraph in which he has to underline a particular letter or word as quickly as possible.
- Encourage the child to perceive the words as a whole rather than through identification of individual letters.
- for a child having difficulty in memorising times tables, help him to memorise by explaining number relationship clearly.
- For improving reading and writing skills, give dictation of words of graded difficulty and exercises in single words, simple sentences and gaps in paragraphs to fill.

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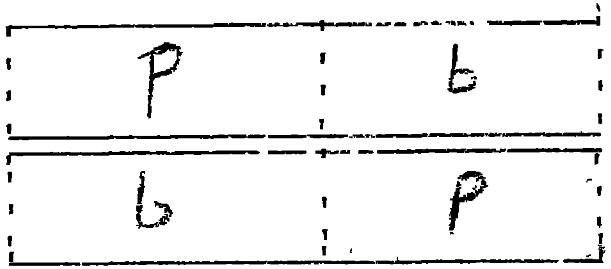
DISABILITY-WISE INVENTORY OF EQUIPMENT AND MATERIAL

Disability	Individual	Aid and Equipment Sharing within School	Sharing amongst Schools	Instructional Material
Orthopeedic	Adjustable furniture, special writing material, thick pen.	Adjustable furniture provision for development of improvised prosthetics.		
Visually-Impaired Blind	Braille slate and stylus, abacus, Taylor frame, Mobility canes.	Brailler, Abacus, Taylor frame, cassettes and Talking books, Maps, Embossed recreational materials.	Braille sheets, thermoform machine, Maintenance services for Brailler, embossed recreational materials.	Braille textbooks, material on cassettes and talking bo
Partially-sighted and low visi-on children.	Special adaptive equipment like hand magnifiers to be used with spectacles portable reading lamps.	Specially designed desks with adjustable magnifiers, white boards in stead of black boards, aids for enlarged projection.	Special arrangements for producing large print materials.	Large print material
Hearing Impaired.	Individual hearing aids.	Voice trainer, large mirror size 3' x 6' for speech therapy, visual illustrations.		
		Mirrors 10' x 6' in each classroom. Group hearing aids and cells for hearing aids.	Audiometer, Voice trainer, maintenance facilities for hearing aids.	Special learning materials like flash cards, charts, educational games, handouts of classroom activities.

.....8.

Disability	Individual	Aids and Equipment Sharing with School	Sharing amongst Schools	Instructional Material
Mentally Retarded		Sensory apparatus kits prepared on the lines of Maria Montessori or kits produced by NCERT for early childhood Education Programme.		Material written on alower reading level than average

Teaching Writing skill to Children with Upper Limb Impairment Children in IED Settings

Teaching Point	Teacher's Behaviour	Students' Behaviour	Adaptation
Teaching to write letters. For the orthopaedically handicapped child it is better to teach writing similar shape (Example of p and b has been taken).	The teacher provides cards with the letter b written in many colours saying "this is the letter b".	Students will look at the cards and observe the letter b.	The card is adjusted to the height required by the orthopaedically handicapped so that hecan touch and see it.
	The teacher provides another card with the letter p written on it.	Students observe the card.	

Instructional Resources from the Resource Room:

Resource Teaching is a pre-requisite of Integrated Education. Resource teaching bridges the gap-between handicap and normal children. There are three basic requirements for effective resource teaching.

i. Congenial environment - positive attitude of parents, siblings, teachers and peers.

ii. Adequately prepared instructional materials for the child as well as for regular teachers.

iii. The child has to be properly motivated in order to be attentive and cooperative in the resource room teaching.

Aids and Equipments for Visually Impaired:

Braille Duplication and Braille Writers.

Writing Aids.

Braille Paper.

Talking Books and Tape Recorders.

Mobility.

Low Vision Aids.

Other Optical Aids.

Educational Aids/Mathematical.

Educational Aids/Geography.

Teaching Aids.

Intelligence Tests.

Vocational Aids.

Measurement.

Clocks and Watches.

Games and Puzzles.

Sports.

Kitchen Equipment.

Personal Devices.

.....10.

Aids and Equipments for Mentally Retarded :

1. Pegs

   Aim : To teach general awareness (number skill through play-way method).

2. Dominoes

   Aim : To teach colour concept.

3. Sensorial Apparatus

   Aim : To teach size concept.

4. Matching Cards

   Aim : To teach how to match various types of figures.

5. Recreational Toys

   Aim : To teach motor ability.

6. Geometrical Shapes

   Aim : To teach shape concept.

7. Mathematical Signs

   Aim : To teach number skills.

8. Model Clock

   Aim : To teach time concept.

9. Alphabets/Digits.

   Aim : To teach the child pre-reading.

Sand, water, colour, clay for perceptual motor training.

DISABLED CHILDREN AND BIHAR EDUCATION PROJECT

Dr. Zafar Alam
Ph.D.(Education)
Headmaster,
Govt. Middle School,
Shrikhinda, Nokha,
Rohtas, Bihar.

Disabled children have some peculiar physical, mental, behavioural and sensory characteristics. These characteristics differentiate them from normal children. Disability hinders one in discharging normal function of life. Though every disability differs from the other yet disability is broadly classified as: (1) Mental Retardation (2) Visual impairment (3) Speech and Hearing Handicap (4) Learning disabilities (5) Orthopaedic Handicap.

DISABILITIES

Mental retardation is not a disease. It is a condition of mind, most often appearing from very birth and shows its effect throughout the life. The teacher must realise the limitations of mentally retarded children. They are unable to learn fast and cannot grasp things easily and take decision speedly. They are short tempered and have impaired memory. They lack concentration and have poor ability of coordination. These children cannot be helped much if medically treated. Their treatment lies in stimulation, education and training.

Visually impaired children are either blind or partially so. Blind schools are working for the education of blinds but partially sighted are coming to the general schools. Our first duty is to save them from blindness. Blindness is either preventable or curable. Teacher must guard that the attitude and behaviour of normal children may not injure the feeling of visually impaired children.

Ideas are communicated through speech. Communication disorder may be due to the deformity of speech organ. The teacher can identify it when a student frequently mispronounces or hesitates in oral group activities. Hearing loss in young children impaires speech and language development. It may cause deafness also. Deafness may result from ear infection and ear discharge.

National Joint Commission for learning disabilities says "Learning Disabilities is a genetic term that refers to a heterogenic group of disorders manifested by significant difficulties in acquisition and use of listening, speaking, reading, writing or mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction". Children with learning disability have problem of language, memory and perception. Their attitude, attention and motivation are poor.

Orthopaedic impairment hinders in normal function of bones, joints and muscles. In some cases this disability is mild while in other it is severe. However, problem in one part of the body hinders with the function of other organ. Most of the physically handicapped children are educated in general schools. They should be provided assistive equipments and aids.

INTELLIGENCE

Children having sight, hearing and orthopaedic disabilities are not different from the normal children in the level of intelligence. Children with learning disabilities can also be brought to the same level after providing them remedial aids. Only mentally retarded children are of low intelligence. They should be admitted in the classes 2 or 3 years lower than their age.

TEACHER'S RESPONSIBILITIES

In general schools a teacher has to deal with the disabled children alongwith the normal ones. He should know the nature and the degree of disability of every disabled child and must show favourable treatment with him. Teacher must see that assistive aids and appliances are properly used or not. In classroom he should make seating for hard of hearing on front benches. Large print material should be given to partially sighted children. Adjustable furniture must be provided to orthopaedically handicapped children. Headmaster of the school has also to play important role. He should favourably admit disabled children in his school and modify school building for their mobility.

BIHAR EDUCATION PROJECT(B.E.P)

B.E.P. has undertaken a missionary service to completely eradicate illiteracy and to attain 100% literacy in seven districts of the State. "Education for all" is the goal of BEP. But unfortunately till now nothing has been planned out for the most deprived segment of our society. It is the poor disabled children, particularly from the rural areas, for whom BEP has not much to offer.

Section 504 of The Rehabilitation Act (1973) makes discrimination against disabled in education also as illegal. National Policy of Education (NEP 1986) provides full protection to disabled children in their education and training. Its Action Plan for implementation also includes the scheme of Integrated Education of Disabled Children (IEDC). NEP rightly opines that the goal of Universalisation of Primary Education (UPE) cannot be achieved if the education of disabled children is ignored.

It must not be forgotten that every child has right to education and no child is ineducable. Statistically we hav a good number of disabled children. Hence, it is inevitable to consider their special problem and educational requirements while any educational project is designed. BEP's 10 day training programme has already been completed. Thousands of teachers have benefitted themselves with this orientation programme. Presently 11 day content based teacher's training programme is going on throughout seven districts of the State. But in these training programmes nothing is being introduced about the problems and education of disabled children. It is quite essential to spare atleast two periods in these training courses exclusively for discussing the kinds, characteristics and educational requirements of disabled children.

It was the praiseworthy step of Mr. Rajesh Bhushan, D.D.C.-cum-Programme Coordinator of B.E.P., Rohtas, who alone nominated five teachers of his district to participate in a very valuable and useful workshop on the education of disabled children in the

Regional College of Education, Bhubaneswar. 30 delegates from the eastern part of India including Bihar, Orissa, Manipur, Nagaland and Mizoram spent their 5 days in duscussing the problems and the educational requirements of disabled children. More than 50% of the participants of the workshop belonged to Bihar alone. For B.E.P., it is a good opportunity to take full advantage from these trained persons. B.E.P. must advance in this direction for its own purpose - the purpose to universalise primary education in Bihar. In this direction much guidance can be had from N.E.P. programme of Action which also includes guidelines of Integrated Education of Disabled children.

ASSIGNMENTS

SE 1. What is the definition of special education ?

SE 2. Why are incidence figures higher than prevalence figures ?

SE 3. List four concepts developed by early contributors to special education that are relevant today.

a)

b)

c)

d)

SE 4. Give four reasons why labels should be deemphasized.

a)

b)

c)

d)

SE 5. Name the items included in an IEP.

a)

b)

c)

d)

e)

f)

g)

SE 6. Describe the instructional setting alternatives of the continuum of services model.

Setting 1.

Setting 2.

Setting 3.

Setting 4.

Setting 5.

Setting 6.

Setting 7.

Contd...3/-

Setting 8.

Setting 9.

Setting 10.

SE 7. Write True or False.

a) The term "exceptional children" refers Primarily to the gifted and talented ______________

b) There has been a steady, even growth in special education services since the early 1900s______________

c) Institutions were originally set up for custodial purposes. ______________

d) Mildly handicapped children should always be educated in regular classes. ______________

e) There are relatively more handicapped children in minority cultures than there are in the general population. ______________

f) In most states teachers have a legal responsibility to report suspected cases of child abuse and neglect. ______________

g) Although there may be architectural barriers in a given School, all programmes must be accessible to the handicapped. ______________

h) A person may be handicapped in one situation and not in another. ______________

i) Today the trend is to reduce diagnostic labeling, particularly of children with mild disabilities. ______________

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j) Labels should be used only when necessary because they may have adverse effects if used incorrectly. ______________

k) Mainstreaming does not mean always placing exceptional children in regular classes. ______________

l) Mainstreaming is the educational placement of the child in the least restrictive environment. ______________

m) The move to small group homes from large residential facilities (known as de-institutionalization) is not necessary. ______________

M.R.8. Write True or False:

a) A diagnosis of mental retardation should never be made solely on the basis of an intelligence test. ______________

b) A special education teacher could not teach if he did not have the IQ scores of the mentally retarded children in the class. ______________

c) Adaptive behaviour measurement is more subjective than measurement of intelligence. ______________

d) Doll's major contribution to a definition of mental retardation is related to the area of social competence. ______________

e) Retarded children should be classified only when classification leads to the development of an appropriate educational programme. ______________

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f) One can place great faith in the use of incidence figures for planning services for the mentally retarded for any given community. ____________________

g) A knowledge of the causes of retardation can be very helpful to a teacher in the actual instruction of retarded children. ____________________

h) The causes of most cases of mental retardation cannot be clearly identified. ____________________

i) Most TMR children will be educated in self-contained special classes. ____________________

j) Special day schools for the retarded continue to be a popular educational option. ____________________

k) Mental retardation is not primarily a medical problem. ____________________

l) The education of mentally retarded should not have overtones of vocational training with ultimate rehabilitation as its goal. ____________________

m) In India, concentration must be in rural areas and community based services on a large scale are very much required. ____________________

n) The presence of CNS pathology is the rule rather than the exception with TMR group. ____________________

Contd...6/-

MR 9. Fill in the blanks.

a) The popularly used tests of intelligence generally report a summary of performance in the form of an ______ score.

b) The AAMD requires that a child'

______________________ and

____

be considered in diagnosing mental retardation.

c) The components of adaptive behaviour are

____

d) A significantly subaverage score is one that is ________ standard deviations below the mean on a standardized test of intelligence.

e) The developmental period is the period between the child's ______________ and

____

f) The three categories in the classification system which are most useful for special education programming are ____________,

______________________.

g) The major criticism of foster family care for the retarded is ______________.

h) The mentally retarded child has epecial problems with letters which have ________ and ______________________.

i) The look-say method is a disaster for mentally retarded child. He needs phonics and tactile perception through ______________.

j) The ______________________________ between professional people is a big deterrant to develop meaningful programmes for the retarded.

k) It is necessary to ____________________ the programme if it has not done any good to the child.

l) Slow learners must be provided with relatively _______________of work of a simple type.

m) The slow learners form a ____________________ of the school population.

n) The group between one and two standard deviation below the mean is described as having ___________ ______________________________.

MR 10.) Complete the following sentences with one of the options provided.

a) The focus of mainstreaming is to help __________ the life of the retarded child (Protect/Normalize/organise).

b) Most professionals believe that ______________ programmes provide the mentally retarded and handicapped with the best educational opportunities. (Special Education/Mainstreaming/Segregated).

c) ________________________is one alternative which is going to be very helpful in serving a large number of mentally retarded in India (IED/Special School/Residential schools/Sheltered Homes).

d) National Policy of Education-1986 (MHRD,Govt. of India) envisages education of handicapped children in ______________________________ as far as possible. (Common Schools/Special Schools).

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e) ________________________________ are the first and Primary Educators of the mentally retarded child. (Social workers/Parents/ Teachers/Community Health workers/Doctors).

f) To be classified as mentally retarded, a person's IQ, as measured by a standardized intelligence test, must be lower than ________ (55/70/100).

g) Organic causes of mental retardation generally lead to ________________________________ retardation. (mild or moderate/severe or prfound).

h) Mental retardation that occurs because of a lack of Oxygen in the bloodstream is caused by ______ ____________________ (Systemic disease/infections disease/Physical agents).

i) Special education programmes have been challenged on the basis of depriving children of ________________________________ ________________________________ (personalized attention/Proper diagnosis/ their constitutional rights).

j) Davison and Neale have suggested that ________________________________ of retarded children would probably achieve higher levels of intellectual and social functioning if they were provided with appropriate training at home-(20%/40%/a majority).

MR 11. Which of the following is not used to classify an individual as mentally retarded.

a) An IQ score for below the mean.
b) An inability to meet social demands.
c) Problems that manifest themselves before the age of sixteen.
d) At least one behaviour problem.

Contd..9

MR 12. Which of the following best describes a case of mild retardation ? The person can

a) achieve an intellectual level comparable to a 16-year-old.

b) Work in skill areas with some supervision.

c) Care for himself in basic hygiene areas but cannot do much more on his own.

d) None of the above.

MR 13. There are more mentally retarded people in the lower socio-economic classes because.

a) Children of these classes are mentally not reinforced for intellectual abilities.

b) Retardation is detected and reported by welfare and poverty programmes.

c) Lower class people have inferior genes

d) None of the above.

MR 14. Which of the following is a false statement ? In the next decade we can expect

a) more specific labels for the mentally retarded

b) more support from the legal system for the retarded.

c) less segregation of retarded and average children in the classroom.

d) educators to develop more positive and productive programmes for the retarded.

MR 15. The idea of providing extra help and specially trained educators to assist retarded children in making significant gains

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a) is mandated by the Education for all Handcapped Children's Act.

b) is referred to as special education

c) has received a considerable amount of criticism

d) all of the above.

MR 16. Fill in the blanks

a) The components of AAMD. Definition of mental retardation are

i) ______________________

ii) ______________________

iii) ______________________

b) Approximately ____________________ % of population in India is considered mentally retarded.

c) There are variations in the prevalence of mental retardation in India. The reasons for them could be lack of uniformity in

i) ______________________

II) ______________________

iii) ______________________

MR 17. Match the following

1.	IQ level	medical
2.	Level of functioning	psychological
3.	Cause of MR	adaptive behaviour
4.	Deficient in MR	educational
5.	Severe	50-70
6.	Mild	35-49
7.	Moderate	below 20
8.	Profound	20-34

MR 18. Study the following statements and write True or False.

a) A five year old child with mild mental retardation cannot be distinguished from a normal child of five years in many areas of development.

b) A 16 year old person with moderate mental retardation can go beyond 5th grade level in academic subjects.

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c) A 22 year old person with severe mental retardation can be trained in all the vocational skills and can support himself and his family.

d) A 13 year old child with profound mental retardation will respond for training in self help skills.

d) A 27 year old person with mild mental retardation can pass pre-university examination.

MR 19. Which one of the following is not a prenatal cause of mental retardation.

a) Exposure to X-ray

b) Birth anoxia

c) Rubella

d) Chromosomal abnormality

MR 20. Which one of the following is the most common cause of mental retardation in India ?

a) Diabetes in the mother

b) Difficulties during delivery of the child

c) Jaundice inthe mother

d) German measles in the mother

MR 21. Mental retardation can be caused by

a) Ill treatment of mother during pregnancy.

b) Interacting with mentally retarded persons.

c) Pregnancy after 35 years.

d) Black magic.

MR 22. List four preventive measures against mental retardation during the post natal period.

a) ______________________________

b) ______________________________

c) ______________________________

d) ______________________________

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MR 23. In a mentally retarded person with fits

a) Fits cannot be controlled

b) Behaviour problems are always present

c) Frequent fits impair learning process

d) None of the above.

MR 24. Hyperkinesis includes all of the following except

a) Excessively active

b) Distractibility and short attention span.

c) Vacant stare

d) Lack of inhibition and poorly coordinated activity.

MR 25. List - four conditions which can be mistaken for mental retardation.

a) ____________________

b) ____________________

c) ____________________

d) ____________________

MR 26. One of the commonest forms of multiple handicap is

a) Down's Syndrome

b) Cerebral Palsy with mental retardation

c) Learning disabilities

d) Mental retardation with microcephaly

MR 27. Match the following:

1) Neck control	a) 8 months
2) Sitting without support	b) 24 months
3) Standing without support	c) 4 months
4) Indicates toilet needs.	d) 10 months

MR 28. Give any three indicators of mental retardation

a) ____________________

b) ____________________

c) ____________________

Contd...13/-

MR 29. Match the following:

1) Social smile	a) 6 months
2) Drinking from a glass by self.	b) 4 months
3) Rolling Over	c) 15 months
4) Walking without support.	d) 21 months

MR 30. Arrange the following steps in sequence.

1) Intervention
2) Diagnosis
3) Screening for mental retardation
4) Assessing current level of functioning
5) Psychological testing

MR 31. A male child aged 9 months is brought to you with the complaints of inability to hold the head, not able to roll about and not able to fix the eyes on parents. The child cries when hungry. The mother feeds the child periodically. On examination the child is found to be in lying position, not responding to any stimuli. The doctor after examining reported that clinically all the systems are normal.

MR 32. A ten year old boy is brought to you with the complaints of poor scholastic performance and adament behaviour. He is studying in 5th standard. The parents report that the boy scores poor marks in class examinations since one year. He picks up quarrels with other children in the school. He shows interest in games and is found to be playing all the time. According to doctor's report the boy is normal physically. How will you proceed further in this case ?

MR 33. A seven year old girl is brought to you with the complaints of inability to talk properly, difficulty in walking, fits once a month and inability to brush teeth, bathe and dress properly. On a detailed enquiry it is found that the child was born after a prolonged labour and all the milestones of development of the girl were delayed. The doctor has prescribed medicines for fits and the physiotherapist is giving passive stretching exercises for the limbs as the limbs were found to be stiff. How will you proceed further in this case ?

Contd...14/-

MR 34. What are the three types of tests used for assessing general intelligence ?

a) ______________________________

b) ______________________________

c) ______________________________

MR 35. Developmental schedules are most useful for the age group:-

a) 3-22 years
b) 5-15 years
c) 0-03 years
d) all of the above.

MR 36. The most commonly used test for assessing adaptive behaviour in mentally retarded persons is

____.

MR 37. A gross assessment of the ____________________

and ______________________________deficits are necessary before assessment as they affect the psychological test performance.

MR 38. Write true or false.

a) The intellectual functions and adaptive behaviour of a mentally retarded person can be assessed by using a single test.

True/False

b) Presence of sensory and motor impairments, language delay and behaviour problems pose difficulty in the psychological assessment of mentally retarded persons.

True/False

c) While testing a mentally retarded person, one should choose a complex test first and then go for simpler tests.

True/False

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d) Keeping colourful toys, toffees and biscuits come in handy in establishing rapport with a mentally retarded child during a test situation. True/False

e) Seguin form board test is a verbal test. True/False

f) Vineland Social Maturity Scale is the most commonly used Adaptive Behaviour Scale for mentally Retarded individuals in India. True/False

g) Observations about family interaction patterns should not be included in a phychological report. True/False

h) The IQ score is a gross estimate of the general intellectual functioning and it does not give a view of the abilities on individual test items. True/False

MR 39. Breaking down the teaching steps into small, systematic ones is called________________

MR 40. Write True or False

a) The activities/skills must be taught only once a day. True/False

b) Training of the mentally retarded person must be carried out only at the DRC. True/False

c) Child should be appreciated even if he attempts to do a particular task. True/False

d) Assessment of mentally retarded persons should be done only once in 3 years. True/False

e) Two or three skills or activities can be simultaneously taught to a mentally retarded child. True/False

f) Children with profound mental retardation can be integrated in normal schools. True/False

MR 41. The three aspects of the integrated education of the disabled are

a) ______________________________

b) ______________________________

c) ______________________________

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MR 42. A male child aged 2 years needs training in sitting without support. He does not have any other handicap. What activities will you take up to train him ?

MR 43. A child of 4 years needs training in standing without support. He does not have any other handicap. What activities will you take up to train him ?

MR 44. A child of 10 years needs to be trained in indicating his toilet needs. How will you train him ?

MR 45. Behaviour modification may be used to

________________ ________ ________

undersirable behaviours and ______________

adaptive behaviours.

MR 46. Behaviour modification may be used to ________

undesirable behaviours and ______________

____________________adaptive behaviours.

MR 47. The target behaviour should be defined in

____________________ and ______________

terms.

MR 48. Name the five steps in implementing a behaviour modification programme.

a) ________________ (b) ________________

c) ___ ____________ (d) ________________

e) ________________

MR 49. Write true or false.

a) Antecedents are the events which occur immediately before the behaviour has occured. True/False

b) Differential Reinfordement should never be used with punishment procedures. True/False

c) Extinction should be used when problem behaviours are self-injuries or harmful to others. True/False

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d) Aversion is the last method to be used for decreasing undesirable behaviours. True/False

e) Intermittent reinforcement is generally used first when teaching a new skill. True/False

MR 50. Name any four techniques for decreasing undesirable behaviours.

a) ____________________ (c) ____________________

b) ____________________ (d) ____________________

MR 51. The four principles of presenting reinforcement are:

a) ____________________ (c) ____________________

b) ____________________ (d) ____________________

MR 52. Match the following:

1.	Social reinforcer	(a)	Pleasant event following behaviour.	( )
2.	Primary reinforcer	(b)	Money	( )
3.	Secondary reinforcer	(c)	Praise	( )
4.	Positive reinforcer	(d)	Chocolates	( )

MR 53. The two types of chaining procedures are

____________________________ chaining and

____________________________ chaining.

MR 54. What are the four schedules of intermittent reinforcement ?

a) ____________________ (c) ____________________

b) ____________________ (d) ____________________

MR 55. Name four commonly used procedures for increasing adaptive behaviours.

a) ____________________ (c) ____________________

b) ____________________ (d) ____________________

Contd...18/-

MR 56. The characteristics of a good counsellor are

a) ____________________ (c) ____________________

b) ____________________ (d) ____________________

MR 57. List four important messages which you would give to the parents of a mentally retarded child in a rural area.

a) ____

b) ____

c) ____

d) ____

MR 58. Write True or False

a) Parents should be given high hopes that the mentally retarded child will show dramatic results. True/False

b) Lot of time must be spent in understanding the problems of the parents. True/False

c) The goal of counselling is to protect the mentally retarded child from being illtreated. True/False

d) Forming parent associations in the village will help the parents to understand the problem better. True/False

VII.59 Fill in the blanks.

a) The two parts of the visual system are the ______________________________ and the ______________________________.

b) Nearsightedness is to ______________________________ as farsightedness is to hyperopia.

Contd...19

c) Two diseases that resulted in large numbers of multihandicapped blind children are ______________________.

d) ______________________ is the eye disorder caused by excessive Oxygen in incubators of premature babies.

e) Visually impaired-children are classified as either ______________________

or ______________________.

f) With correction, a legally blind child has visual acuity of 20/200. A partially seeing child has visual acuity between __________

and ______________________.

g) Field of vision is measured in terms of

______________________.

h) The name of the most common instrument for screening visual impairements in children is the ______________________.

i) The most widely accepted reason for social - emotional adjustment problems in blind children is ______________________.

This can be overcome by ______________________

____

______________________.

j) The most important areas included in the curriculum of the visaully impaired but not in the curriculum of those with normal vision are ______________________ and ______________.

k) The media through which visually impaired children obtain information are ______________,

______________________ and ______________.

l) The first Schools established for the visually impaired in Europe and the United States were ______________________ Schools.

m) Persons involved in assessing visually impaired children should pay particular attention to the effects of the loss of vision on __________ development.

n) Visual acuity is the ability to clearly distinguish __________ or __________ details at a specified distance.

o) Visual acuity is measured by having children read letters, numbers or other symbols from a snellen chart __________.

p) The basic function of the eye is to collect __________ from the environment and transmit it to the __________.

q) A person with normal eye sight is said to have __________.

r) If a person's field of vision is 20 degrees or less, then he/she is considered __________ __________.

s) The prolonged sensory deprivation is likely to influence __________ and __________ of the blind.

t) A person who has received the best optical correction and can see at __________ in the best eye what a person with normal vision can see at __________ is considered legally blind.

VH 60. Write true or false.

a) Cataracts are growths on the eye __________

b) Visual acuity is a term for sharpness and clearness of vision. __________

c)

Contd...21/-

c) Although blind children may have delayed physical development due to their inability to do some physical activities, they typically do not differ in physical ability from normal seeing children. ______________

d) Visually handicapped children are usually taught the same sequence of subjects as children with normal vision. ______________

e) Many instructional procedures that are effective for normal children are also effective for visually impaired children. ______________

f) Partially seeing children who hold their books close to their eyes when reading should be instructed not to hold the materials so close. ______________

g) The residential school traditionally follows the same curriculum as other schools in the same state or region. ______________

h) Once the child has been placed in a particular type of programme, it is safe to assume that the child will remain in that programme thoughout his/her school career. ______________

i) The school principal makes the decision about the type of programme that a visually impaired child should be placed in. ______________

j) Parents must consent to the collection of evaluation data and to the placement of their visually impaired child in a particular programme. ______________

k) Normative data provided for standardized tests are appropriate for use with visually impaired children. ______________

Contd...22/-

l) The community affects a blind child by not only its general attitude but also the attitude and behaviour of the neighbours, parents and peers. ________

m) Teacher can generalize about blindness on the basis of limited experience. ________

n) All blind have special talents like musical talent and fantastic memory. ________

VH.61 Define visually impaired children.

VH.62 Explain the meaning of an index of visual acuity that is stated as 20/150.

VH.63. From the perspective of educational definitions, how would you differentiate between a blind and partially seeing child ?

VH.64. List of the symotoms that may indicate eye problems.

a)

b)

c)

d)

e)

f)

g)

VH.65. List three possible causes of apparant retardation in the intellectual development, School achievement, and concept development of blind children.

a)

b)

c)

Contd...24/-

VH.66. List **some** optical aids that can be used by partially seeing children to assist them in reading.

VH.67. Technological advances have resulted in the development of a number of exciting new devices for the visually impaired. List some devices related to reading that blind people can use.

a)

b)

c)

d)

VH.68. List the five types of local day school programmes provided for visually impaired children.

VH.69. List five types of information that are used to make placement decisions for visually impaired children.

Contd..25/-

VH.70. What three types of instruments are used to assess VIC ?

VH.71. De Mott suggests that information about a number of areas be included in the educational assessment of the visually impaired. List some of these areas.

VH.72. Sighted persons feel pity for visually impaired because:

a) Visually impaired cannot live effectively in the world of sighted.

b) Sighted people fail to understand the strength of visually impaired.

c) It is taught to sighted by the society.

d) Kindness is a value.

VH.73. A visually impaired child can learn effectively if:

a) He is given a variety of experience

b) He is taught only through auditory mode.

c) He is given a chance to learn.

d) He is left to himself.

VH.74. Parents of V^{I}C tend to overprotect because:

a) they love their children.

b) they hate their children

c) they are afraid for their safety

d) they fail to treat them as normal children.

VH.75. Daily living skills are

a) curricular skills

b) extra-curricular skills

c) skills for performing day-to-day activities.

d) skills for maintaining good health.

VH.76. Skills required for the readiness of the child to learn day-to-day survival skills are

a) daily living skills

b) pre-requisite skills

c) academic skills

d) curricular skills.

VH.77. For teaching all daily living activities.

a) a common methodology should be followed.

b) methodology should be based on the nature of activity.

c) methodology is not necessary.

VH.78. Daily living skills should be taught according to

a) age levels

b) grade levels

c) ability level

d) none of the above

VH.79. Aids are necessary for teaching

a) all daily living skills.

b) certain daily living skills.

c) academic and not daily living skills.

Contd...

VH.80. Learning of daily living skills by an individual

a) continues even after the schooling

b) continues till the end of School year

c) takes place at different time intervals

d) takes place in pre-school years.

VH.81. Listening to music is

a) an academic skill b) an auditory skill

c) a daily living skill

VH.82. Money identification and money management is

a) an olfactory skill

b) a daily living skill

c) an orientation and mobility skill

VH.83. Teaching daily living skills can be regarded as

a) a separate subject

b) an integral part of the class lessons

c) out of class hours activity

VH.84. Teaching household activities is

a) mostly meant for children

b) mostly meant for men

c) mostly meant for adult blind women

VH.85. The abilities of the individual to move from one place to another are known as

a) Orientation skills

b) Plus curricular skills

c) Mobility skills

d) Walking skills

Contd...28/-

VH.86. Teaching of mobility skills should be the same for all VIC.

a) Yes, it should be the same for all

b) No, it depends upon the onset of blindness

c) No, it depends upon the daily living skills.

d) It depends on the capability of the teacher.

VH.87. Orientation Skills are greatly influenced by

a) the sense of taste.

b) the senses of touch and hearing

c) the sense of smell

d) the vision.

VH.88. Widely used mobility techniques in developing countries are

a) sighted guide techniques

b) guide dogs

c) long cane techniques

d) electronic aids

VH.89. Guide dog techniques cannot serve the purpose of developing countries owing to the

a) inadequacy of training methodology

b) enormous cost of the system

c) prejudices among visually impaired people

d) shortage of dogs

VH.90. At the primary school, the VIC should

a) not be taught O & M skills

b) be taught the long cane techniques

c) be taught the pre-cane mobility skills

d) be taught guide dog technique

VH.91. In an integrated setting, the VIC can be oriented to the School environment in a better way by

a) the sighted peer group
b) the regular teacher
c) the resource teacher
d) the parents.

Contd...29/-

VH.92. In an integrated setting

a) the resource teacher has to teach all mobility skills.

b) the resource teacher could teach O & M skills within the School Campus but not for outside travel.

c) the resource teacher should not teach mobility

d) the resource teacher should leave it to regular teachers to teach.

HH.93. Fill in the blanks.

a) The part of the brain most important to hearing is the ____________________

b) The human ear begins responding to sound at ____________________ of fetal development.

c) A person who had a hearing loss severe enough that he cannot learn language through hearing is classified as ____________________.

d) When a hearing loss is assumed to explain poor School performance, the loss would be termed ____________________.

e) When there is damage or deterioration of the cochlea or VIII nerve, the hearing loss is termed ____________________.

f) When a child displays weakness in auditory skills and yet shows no measurable hearing loss, a ____________________ should be suspected.

g) A graphic portrayal of a person's hearing is called in ____________________

h) The speech frequencies on the audiogram are ____________________, ____________________, and ____________________ HZ.

i) The audiometric test that measures a person's ability to understand speech is called ____________________

j) The average age at which children produce their first words is ____________________

k) Severe language and speech disorders should be expected if a child's average hearing loss is greater than ____________ dB and it occurs before age ____________.

l) A child whose hearing loss is greater than ____________ dB is considered deaf.

m) The medical specialist who typically deals exclusively with children is called a

____

The medical professional who specializes in treating ear disorders is the ____________.

n) ____________

consists of techniques that help a hearing impaired child use his residual hearing as much as possible.

o) When a hearing impaired watches a speaker's lip and facial movement, she is ____________.

p) Educators of the deaf who prohibit the use of gestures by the child are called ____________.

q) The professionals who evaluate hearing by means of audiometric testing are called ____________.

r) Educational settings for the severely hearing impaired include the ____________

____

and ____________.

s) The intensity or loudness of normal conversational speech at a distance of five feet is between ____________ decibels.

t) Hearing loss can affect ____________

____________ development, and put time

____________, ____________ and ____________

adjustment.

u) Hearing aids make sounds ____________

and they do not make sounds ____________.

v) For educational purposes, children with hearing disorders are classified as either ______________________ or ______________.

w) The philosophy of total communication makes use of both ______________ and ___________ procedures to teach deaf children.

HH.~~94~~.Write "True" or "False"

a) Earwax is dirt and should be cleaned from the ears. _______________

b) Children's hearing cannot be tested accurately until they are six years of age. _______________

c) The normal child established an auditory feedback loop at three months of age. _______________

d) Deaf individuals are two to five years mentally retarded as compared to individuals with normal hearing. _______________

e) The reading skills of deaf individuals may lag as much as eight to nine years behind those of their hearing peers. _______________

f) Hearing aids are electronic devices that always make sound clearer. _______________

g) Seventy to eighty percent of the sounds in our language are visible on the speaker's lips. _______________

h) Language and speech delay can result from recurrent ear infections. _______________

Contd...32/-

i) Hearing aids are never appropriate for children with conductive hearing loss. ____________

j) The classroom teacher should use exaggerated lip movement and speak loudly to assist the hearing impaired child. ____________

k) The manual approach to communication stresses speech reading and auditory training. ____________

l) The intensity range for average conversational speech is 40-65 dB ____________

HH.95. What are the three basic components of a sound system ?

HH.96. How would you define sound ?

HH.97. List the five major types of hearing loss.

HH.98. What are four signs that might indicate a hearing loss ?

HH.99. List the different types of audiometric test.

Contd...33/

HH.100. What are some major areas of development and adjustment for those with hearing loss ?

HH.101. What are four reasons that a child's hearing aid might squeal ?

HH.102. What are the reasons a physician might suspect a hearing loss in a newborn baby ?

HH.103. Name some signs of possible hearing loss that a classroom teacher should watch for.

HH.104. Read the following and tick the correct answer.

104.1 The resource teacher works closely with the disabled child in collaboration with

a) regular teachers b) parents

c) physicians and other specialists

d) all.

10.4.2 The prerequisities of resource room teaching are ;

a) a visiting resource teacher
b) a very big resource room
c) 10-20 hearing impaired children
d) none of the above.

104.3 Do all hearing impaired students require resource facility ?

a) all
b) mild and moderate
c) moderate and severe
d) severe and profound

104.4. Periodic assessment is done by the resource teacher in order to

a) correct speech
b) develop resource facilities
c) arrange parent-teacher conferences
d) know the level of performance and adjustment of the child.

104.5 What kind of exercises are required to develop correct pronounciation in hearing impaired.

a) the use of finger spellings
b) similar sounds in the minimal pairs
c) adjustment in the regular class
d) none of the above.

104.6 The administrators and heads of regular schools should

a) not allow the hearing impaired to be admitted in their school.
b) encourage the admission of the hearing impaired child to their school.
c) consult higher authorities about such admission
d) consult parents of other children about such admissions.

104.7 To give the maximum benefit of instruction to the hearing-impaired child, the regular classroom teacher

a) should speak very slowly
b) should speak very loudly
c) should make some changes in the style of his teaching and behaviour.
d) should not put questions to him

104.8 The hearing-impaired can substantially hear and understand others if.

a) he is given nearly auditory training and practice in speech reading.
b) he is very intelligent.
c) he is given some special diet.
d) he is very healthy.

104.9 The most important role in successful integration of a hearing-impaired child in a regular school is of

a) the head of the School
b) the non-teaching staff of the School
c) the hostel staff
d) the class teacher

104.10 The hearing impaired child can do better than his hearing peers.

a) in all acativities of the School
b in co-curricular and extra-curricular acetivities.
c) in any particular academic subject
d) in following class instruction

104.11 Generally, the hearing impaired child has defective
a) physique
b) language and speech
c) social attitudes
d) mental growth

104.12 The desirable or undesirable behaviour of hearing students of a class towards the hearing impaired child depends very much on

a) how the head of the School treats him.

b) how the other staff members treat him.

c) how other children of the School behave with Him .

d) how the class teacher treats him.

104.13 The hearing impaired child can understand his teacher's speech better if

a) the classroom is well lighted

b) the classroom has ordinary light.

c) the classroom has special furniture for him.

d) the classroom has special material for him.

104.14 The shortcomings of hearing impaired child can be overcome by the

a) head of the school

b) class teacher

c) resource teacher in a resource room

d) parents.

104.15 The successful integration of a hearing impaired child in a regular school depends on the attitude of the

a) head of school alone

b) staff members only

c) parents of hearing children

d) all who come in contact with him.

HH 105 Give the various degrees of hearing loss.

LD106 What are Wallace and McLoughlin's four dimensions of learning disabilities ?

LD107 List the seven academic areas in which an LD child may have a severe discrepancy between ability and achievement.

LD108 What are the three primary objections to labeling a child as learning disabled ?

LD109 In order to be called a characteristic, difficulties that children with learning disabilities have must be

LD110 Give the seven educational characteristics of reading disability.

LD 111. What are the factors related to reading disabilities ?

OH 112. Write "True" or "False".

a) The term "Proximodistal" is used to refer to the process whereby the child gains control of the muscles in the trunk before gaining control of muscles in the fingers ____________

b) Cerebral palsy is caused by brain damage. ____________

c) There is higher incidence of speech disorders, sensory disorders and mental retardation in the cerebral palsied population than in the 'normal' population. ____________

d) Cerebral palsy is rarely accompanied by convulsive disorder. ____________

e) Cerebral palsied children do not attend public Schools. ____________

f) Most children with osteogenesis imperfecta (congenital bone-disease)have normal intellectual ability. ____________

g) Most children with cystic fibrosis (genetic disorder affecting pancreas/Lungs) die during childhood. ____________

h) Epilepsy is treated primarily through chemotherapy(drugadministration to control the problem). ____________

i) In treating a person having a grand mal seizure (severe convulsive disorder involving loss of consciousness), it is wise to place a pencil or tongue depressor between the teeth to prevent swallowing of the tongue. ______________

j) A lavatory stall can be made accessible to all persons in wheelchairs by placing grab bars at convenient heights. ______________

k) Thick door mats should be used in front of doors to give wheelchair travelers better traction on wet days. ______________

l) Open-riser stairs are particularly well suited for persons who are wearing braces. ______________

OH 113. Fill in the blanks.

a) The suffix that means paralysis, or inability to move, is ________________

b) ____________________ means before birth, ______________________ means during birth, and ________________ means after birth.

c) A condition characterized by low tolerance for exercise is ________________

d) Children with asthma typically have difficulty in ______________

e) Diabetes is controlled through ____________
____

f) A temper tantrum may sometimes be confused with ____________________________ seizure.

g) A child who falls to the ground, thrashes around and loses bladdder control may be suffering from a ____________________ seizure.

h) The type of seizure that often goes unnoticed is a ____________________

i) Standards for the elimination of architectural barriers have been developed in USA by an organization called ____________________

j) Doorways should be at least ____________ inches wide to accommodate wheelchairs.

k) Ramps should be at least __________ feet wide.

l) Lavatory towel dispensers and other appliances should be mounted no more than ___ inches above the floor.

m) Obstructions on walkways should not be more than ____________________ high or they may cause travel problems.

OH 114. Name the ambulation disabilities caused by cerebral and noncerebral factors.

OH 115. Name the disabilities that affect vitality.

OH 116. Name the convulsive disorders (epileptic seizures).

OH 117. Name different types of cerebral palsy.

OH 118. Name the disorders associated with cerebral palsied population.

OH 119. Which type of supportive service is used to minimize muscular deterioration in children with diseases such as muscular dystrophy, spinal muscular atrophy, and polio.

OH 120. When is it necessary to call in professional help for a child having a grand mal seizure ?

OH 121. Differentiate between a prosthesis and a Orthosis.

OH 122. When would it be inappropriate to recommend an assistive or adaptive device for use by a person with physical disabilities ?

OH 123. Describe the conditions under which you would recommend that orthopedically handicapped children be placed in the regular classroom for their education.

OH 124. What criteria would you propose for selecting physically disabled children for placement in a self-contained special class ?

OH 125. List one question you should ask a physically disabled child's parents in each of the following areas to help develop procedures for carrying for the child.

a) Medical

b) Trafel

c) Transfer

d) Communication

e) Self-care

f) Positioning

*****

ASSIGNMENTS

KEY

SE I Components of the definition should include:

- instruction that is part of the regular education programme.
- instruction that is individually designed to meet the needs of exceptional children.
- designed for children whose needs cannot be met by the regular school curriculum.
- may call for supportive services from speech pathologists, audiologists, physical and occupational therapists, psychologists, counsellors, and others.

SE 2. Incidence includes all persons who may have a condition during their lifetime; prevalence includes only those who have the condition at a specific point in time.

SE 3.
a) Education should be individualized.
b) Tasks should be sequenced from easy to difficult.
c) Students should be active learners.
d) Learning environments should be structured.

SE 4.
a) Labels lower the expectations of teachers.
b) Labels have little relevance for educational practice.
c) Children do not fit neatly into categories.
d) Labeled children are stigmatized.

SE 5.
a) Statement of child's level of performance
b) annual goals.
c) Short-term objectives.
d) time spent in regular education environments
e) related services
f) projected dates for initiation of services and the anticipated duration of services.
g) procedures for evaluation.

Contd...2/-

SE 6.

Seeting 1. Regular class placement with few or no supportive services.

Setting 2. Regular class placement with consulting teacher assistance.

Setting 3. Regular class placement with it inerant specialist assistance.

Setting 4. Regular class placement with resource room assistance.

Setting 5. Special class plaeement with part-time in regular class.

Setting 6. Full-time special class.

Setting 7. Special day school.

Setting 8. Residential school.

Setting 9. Homebound instruction

Setting 10. Hospital or institution

SE 7. a) False

b) False

c) False

d) False

e) False

f) True

g) True

h) True

i) True

j) True

k) True

l) True

m) False

M.R. 8. a) True

b) False

c) True

d) True

e) True

f) False

g) False

h) True

i) True

j) False

k) True

l) False

m) True

n) True

MR 9. a) IQ

b) intelligence and adaptive behaviour

c) academic skill, interpersonal skill, social skill and independent function.

d) two

e) birth and the eighteenth birthday

f) EMR, TMR and S/PR.

g) lack of training of foster parents

h) rotations and reversals

i) writing

j) communication barrier

k) modify

l) small units

m) large segment

n) borderline intelligence

MR 10. a) normalize

b) mainstreaming

c) IED

d) common schools

e) parents

f) 70

g) severe or profound

h) physical agents

i) their constitutional rights

j) a majority

MR 11. d)

MR 12. b)

MR 13. a)

MR 14. a)

MR 15. d)

MR 16(A) a) Significantly subaverage general intellectual functioning.

b) Impairments in adaptive behaviour.

c) Manifestation during the developmental period.

MR 16(B) 2%

MR 16(C) a) Methodology

b) Type of population studied

c) Definition of mental retardation

MR 17 a) (3)

b) (1)

c) (4)

d) (2)

e) (6)

f) (7)

g) (8)

h) (5)

MR 18 (a) True

(b) False

(c) False

(d) True

(e) False

MR 19 b

MR 20 b

MR 21 c

MR 22 (a) Immunization of children

(b) Adequate nutrition to children

(c) Prompt control of fever in children.

(d) Immediate control of fits in children.

MR 23 c

MR 24. c

MR 25 (a) Early infantile autism

(b) Child with emotional disturbance.

(c) Specific learning disabilities.

(d) Child with hearing and/or visual handicap .

MR 26 b

MR 27 (a) (2)

(b) (4)

(c) (1)

(d) (3)

MR 28 (a) Delay in milestones

(b) Fits or physical disability.

(c) Poor scholastic performance.

MR 29 (a) (3)

(b) (1)

(c) (4)

(d) (2)

MR 30 3, 5, 4, 2, 1

MR 31 Start with infant stimulation programme. Stimulate the child with visual, auditory and tactile stimuli. Train the child in motor skills. Refer to a special educationist (or psychologist at the DRC), Physiotherapist and a speech pathologist for necessary follow up advice.

MR 32 This boy may not be mentally retarded as he was normal till 9th year. The boy should be referred to a psychiatrist for detailed examination as he might have some psychological problems resulting in the poor scholastic performance.

MR 33. The ~~current~~ level of functioning has to be assessed and a management plan has to be drawn out to train the child in selfhelp skills and communication skills. The child should be sent for regular follow up to the doctor and the physiotherapist.

MR. 34 a) Developmental schedules.

b) Verbal tests

c) Non-verbal and performances tests.

MR. 35 (c)

MR. 36 VSMS

MR. 37 Sensory and motor

MR. 38 (a) False

(b) True

(c) False

(d) True

(e) False

(f) True

(g) False

(h) True

MR. 39 Task Analysis.

MR. 40 a) False

b) False

c) True

d) False

e) True

f) False

MR. 41 a) Physical Integration

b) Social Integration

c) Societal Integration

MR. 42 Ensure that the child has neck control. place the child on the back. Hold his fingers and pull him to sitting position. See that the legs are stretched and spread apart to get balance. Support the back with the palm and slowly reduce the support. Keep toys in front of the child so that the child is busy with them.

MR. 43 Look for the tone of the muscles of the child. Put him in standing position with support and see whether he can place both the feet uniformly on the ground and himself. Have the child hold your fingers with both his hands. Pull him upto standing position and keep talking to him as you do this. Slowly withdraw one hand and let him hold only one hand and stand. Gradually withdraw

the second hand also. Let him stand. See that his feet are placed apart to balance when you withdraw total help.

MR. 44 See whether the child is mobile. Check for motor problems. Observe and record the time of urination and bowel movements continuously for as period of one week. Using this record as a reference takethe child to toilet 3 to 5 minutes before the noted time. Use one code word always when you make him sit on the toilet or in the toilet area.

MR. 45 decrease and increase

MR. 46 decrease and increase

MR. 47 Observable and measurable

MR. 48
a) Identification of the problem
b) Defining target behaviours
c) Behaviour recording.
d) Functional analysis.
e) Treatment procedure.

MR. 49
a) True   d) True
b) False   e) False
c) False

MR. 50
a) Restructuring the environment
b) Extinction
c) Punishment
d) Differential Reinforcement

MR. 51
(a) Contigency   (c) Consistency
(b) Immediacy   (d) Clarity

MR. 52
(a) (4)
(b) (3)
(c) (1)
(d) (2)

MR. 53 Forward and Backward

MR. 54 (a) Fixed Ratio
(b) Variable Ratio
(c) Fixed Interval
(d) Variable Interval

MR. 55 (a) Token programme
(b) Shaping
(c) Chaining
(d) Prompting

MR. 56 (a) Sincerity
(b) Reassuring
(c) Effective communication
(d) Emotional stability

MR. 57 (a) Mentally Retarded child can be trained.
(b) Mental Retardation is not an infectious disease.
(c) Mental Retardation can be prevented
(d) Step by step training of a mentally retarded child is the key to success.

MR. 58 (a) Fale (c) False
(b) True (d) True

~~MRxx59~~
VH.59 a) eye and the brain
b) myopia
c) retrolental fibroplasia (RLF) and maternal rubella.
d) Retrolental fibroplasia
e) blind or partially seeing
f) 20/200 and 20/70
g) visual arc.
h) snellen chart
i) the negative attitudes of those who can see; the integration of blind children with seeing peers and inservice training for teachers.
j) orientation and mobility
k) tactile, visual and auditory
l) residential
m) concept
n) forms or discriminate specified

o) 20 feet away
p) visual information brain
q) 20/20 vision
r) legally blind
s) personality and mental make-up
t) 20 feet 200 feet

VH 60.
a) False
b) True
c) True
d) True
e) True
f) False
g) True
h) False
i) False
j) True
k) False
l) True
m) False
n) False

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e) Child is inordinately affected by glare from sun and not able to see things at certain times of day.

f) Child has a pronounced squint, rubs eyes excessively and pushes eyeball with finger or knuckle.

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b) Restrictions in the ability to move about in the environment and observe people and objects around them.

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VH 71. visual efficiency

sensory abilities

other impairments

achievement

motor performance

language

intelligence

VH 72. b)

VH 73. a)

VH 74. c)

VH 75. a)

VH 76. b)

VH 77. b)

VH 78. c)

VH 89. b)

VH 80. a)

VH 81 c)

VH 82. b)

VH 83. b)

VH 84. c)

VH 85. c)

VH 86. b)

VH 87. b)

VH 88. c)

VH 89. b)

VH 90. c)

VH 91. a)

VH 92. b)

HH.93. a) Cortex

b) fifth month

c) deaf

d) functional

e) sensori-neural

f) central auditory disorder

g) audiogram

h) 500, 1000; and 2000

i) speech discrimination

j) 12 months
k) 60-89 , 2 years
l) 80
m) pediatrician, Otologist
n) Auditory training
o) lip reading
p) Oralists
q) audiologists
r) residential setting
day school, special class and
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s) 40 and 60
t) speech and language
educational, vocational social and
emotional
u) louder, clearer
v) hard of hearing, deaf
w) Oral and manual

HH. 94. a) False
b) False
c) False
d) False
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HH.104

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HH.104.3 a)

HH.104.4 d)

HH.104.5 b)

HH.104.6 b)

HH.104.7 c)

HH.104.8 a)

104.9 d)

104.10 b)

104.11 b)

104.12 d)

104.13 a)

104.14 c)

104.15 d)

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severe - 60 to 80 decibels

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c) Transfer How is the child transferred on and off the School bus ?

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Setting 5. Special class placement with part-time in regular class.

Setting 6. Full-time special class.

Setting 7. Special day school.

Setting 8. Residential school.

Setting 9. Homebound instruction

Setting 10. Hospital or institution

SE 7.
a) False
b) False
c) False
d) False
e) False
f) True
g) True
h) True
i) True
j) True
k) True
l) True
m) False

M.R. 8.
a) True
b) False
c) True
d) True
e) True
f) False
g) False
h) True
i) True
j) False
k) True
l) False
m) True
n) True

MR 9. a) IQ

b) intelligence and adaptive behaviour

c) academic skill, interpersonal skill, social skill and independent function.

d) two

e) birth and the eighteenth birthday

f) EMR, TMR and S/PR.

g) lack of training of foster parents

h) rotations and reversals

i) writing

j) communication barrier

k) modify

l) small units

m) large segment

n) borderline intelligence

MR 10. a) normalize

b) mainstreaming

c) IED

d) common schools

e) parents

f) 70

g) severe or profound

h) physical agents

i) their constitutional rights

j) a majority

MR 11. d)

MR 12. b)

MR 13. a)

MR 14. a)

MR 15. d)

MR 16(A)	a)	Significantly subaverage general intellectual functioning.
	b)	Impairments in adaptive behaviour.
	c)	Manifestation during the developmental period.
MR 16(B)		2%
MR 16(C)	a)	Methodology
	b)	Type of population studied
	c)	Definition of mental retardation
MR 17	a)	(3)
	b)	(1)
	c)	(4)
	d)	(2)
	e)	(6)
	f)	(7)
	g)	(8)
	h)	(5)
MR 18	(a)	True
	(b)	False
	(c)	False
	(d)	True
	(e)	False
MR 19		b
MR 20		b
MR 21		c
MR 22	(a)	Immunization of children
	(b)	Adequate nutrition to children
	(c)	Prompt control of fever in children.
	(d)	Immediate control of fits in children.
MR 23		c

MR 24. c

MR 25(a) Early infantile autism
(b) Child with emotional disturbance.
(c) Specific learning disabilities.
(d) Child with hearing and/or visual handicap.

MR 26 b

MR 27 (a) (2)
(b) (4)
(c) (1)
(d) (3)

MR 28 (a) Delay in milestones
(b) Fits or physical disability.
(c) Poor scholastic performance.

MR 29 (a) (3)
(b) (1)
(c) (4)
(d) (2)

MR 30 3, 5, 4, 2, 1

MR 31 Start with infant stimulation programme. Stimulate the child with visual, auditory and tactile stimuli. Train the child in motor skills. Refer to a special educationist (or psychologist at the DRC), Physiotherapist and a speech pathologist for necesssry follow up advice.

MR 32 This boy may not be mentally retarded as he was normal till 9th year. The boy should be referred to a psychiatrist for detailed examination as he might have some psychological problems resulting in the poor scholastic performance.

MR 33. The ~~current~~ level of functioning has to be assessed and a management plan has to be drawn out to train the child in selfhelp skills and communication skills. The child should be sent for regular follow up to the doctor and the physiotherapist.

MR. 34 a) Developmental schedules.

b) Verbal tests

c) Non-verbal and performances tests.

MR. 35 (c)

MR. 36 VSMS

MR. 37 Sensory and motor

MR. 38 (a) False

(b) True

(c) False

(d) True

(e) False

(f) True

(g) False

(h) True

MR. 39 Task Analysis.

MR. 40 a) False

b) False

c) True

d) False

e) True

f) False

MR. 41 a) Physical Integration

b) Social Integration

c) Societal Integration

MR. 42 Ensure that the child has neck control. place the child on the back. Hold his fingers and pull him to sitting position. See that the legs are stretched and spread apart to get balance. Support the back with the palm and slowly reduce the support. Keep toys in front of the child so that the child is busy with them.

MR. 43 Look for the tone of the muscles of the child. Put him in standing position with support and see whether he can place both the feet uniformly on the ground and himself. Have the child hold your fingers with both his hands. Pull him upto standing position and keep talking to him as you do this. Slowly withdraw one hand and let him hold only one hand and stand. Gradually withdraw

the second hand also. Let him stand. See that his feet are placed apart to balance when you withdraw total help.

MR. 44 See whether the child is mobile. Check for motor problems. Observe and record the time of urination and bowel movements continuously for as period of one week. Using this record as a reference takethe child to toilet 3 to 5 minutes before the noted time. Use one code word always when you make him sit on the toilet or in the toilet area.

MR. 45 decrease and increase

MR. 46 decrease and increase

MR. 47 Observable and measurable

MR. 48 a) Identification of the problem
b) Defining target behaviours
c) Behaviour recording.
d) Functional analysis.
e) Treatment procedure.

MR. 49 a) True d) True
b) False e) False
c) False

MR. 50 a) Restructuring the environment
b) Extinction
c) Punishment
d) Differential Reinforcement

MR. 51 (a) Contigency (c) Consistency
(b) Immediacy (d) Clarity

MR. 52 (a) (4)
(b) (3)
(c) (1)
(d) (2)

MR. 53 Forward and Backward

MR. 54 (a) Fixed Ratio
(b) Variable Ratio
(c) Fixed Interval
(d) Variable Interval

MR. 55 (a) Token programme
(b) Shaping
(c) Chaining
(d) Prompting

MR. 56 (a) Sincerity
(b) Reassuring
(c) Effective communication
(d) Emotional stability

MR. 57 (a) Mentally Retarded child can be trained.
(b) Mental Retardation is not an infectious disease.
(c) Mental Retardation can be prevented
(d) Step by step training of a mentally retarded child is the key to success.

MR. 58 (a) Fale (c) False
(b) True (d) True

~~MRxx59~~
VH.59 a) eye and the brain
b) myopia
c) retrolental fibroplasia (RLF) and ~~xxxxx~~ maternal rubella.
d) Retrolental fibroplasia
e) blind or partially seeing
f) 20/200 and 20/70
g) visual arc.
h) snellen chart
i) the negative attitudes of those who can see; the integration of blind children with seeing peers and inservice training for teachers.
j) orientation and mobility
k) tactile, visual and auditory
l) residential
m) concept
n) forms or discriminate specified

o) 20 feet away
p) visual information brain
q) 20/20 vision
r) legally blind
s) personality and mental make-up
t) 20 feet 200 feet

VH 60.
a) False
b) True
c) True
d) True
e) True
f) False
g) True
n) False
i) False
j) True
k) False
l) True
m) False
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VH 80. a)

VH 81 c)

VH 82. b)

VH 83. b)

VH 84. c)

VH 85. c)

VH 86. b)

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g) False

h) True

i) True

j) False

k) True

l) False

m) True

n) True

MR 9. a) IQ

b) intelligence and adaptive behaviour

c) academic skill, interpersonal skill, social skill and independent function.

d) two

e) birth and the eighteenth birthday

f) EMR, TMR and S/PR.

g) lack of training of foster parents

h) rotations and reversals

i) writing

j) communication barrier

k) modify

l) small units

m) large segment

n) borderline intelligence

MR 10. a) normalize

b) mainstreaming

c) IED

d) common schools

e) parents

f) 70

g) severe or profound

h) physical agents

i) their constitutional rights

j) a majority

MR 11. d)

MR 12. b)

MR 13. a)

MR 14. a)

MR 15. d)

MR 16(A)	a)	Significantly subaverage general intellectual functioning.
	b)	Impairments in adaptive behaviour.
	c)	Manifestation during the developmental period.
MR 16(B)		2%
MR 16(C)	a)	Methodology
	b)	Type of population studied
	c)	Definition of mental retardation
MR 17	a)	(3)
	b)	(1)
	c)	(4)
	d)	(2)
	e)	(6)
	f)	(7)
	g)	(8)
	h)	(5)
MR 18	(a)	True
	(b)	False
	(c)	False
	(d)	True
	(e)	False
MR 19		b
MR 20		b
MR 21		c
MR 22	(a)	Immunization of children
	(b)	Adequate nutrition to children
	(c)	Prompt control of fever in children.
	(d)	Immediate control of fits in children.
MR 23		c

MR 24. c

MR 25(a) Early infantile autism
(b. Child with emotional disturbance.
(c) Specific learning disabilities.
(d) Child with hearing and/or visual handicap .

MR 26 b

MR 27 (a) (2)
(b) (4)
(c, (1)
(d. (3)

MR 28 (a, Delay in milestones
(b, Fits or physical disability.
(c) Poor scholastic performance.

MR 29 (a) (3)
(b) (1)
(c) (4)
(d) (2)

MR 30 3, 5, 4, 2, 1

MR 31 Start with infant stimulation programme. Stimulate the child with visual, auditory and tactile stimuli. Train the child in motor skills. Refer to a special educationist (or psychologist at the DRC), Physiotherapist and a speech pathologist for necesssry follow up advice.

MR 32 This boy may not be mentally retarded as he was normal till 9th year. The boy should be referred to a psychiatrist for detailed examination as he might have some psychological problems resulting in the poor scholastic performance.

MR 33.The ~~current~~ level of functioning has to be assessed and a management plan has to be drawn out to train the child in selfhelp skills and communication skills. The child should be sent for regular follow up to the doctor and the physiotherapist.

MR. 34 a) Developmental schedules.

b) Verbal tests

c) Non-verbal and performances tests.

MR. 35 (c)

MR. 36 VSMS

MR. 37 Sensory and motor

MR. 38 (a) False

(b) True

(c) False

(d) True

(e) False

(f) True

(g) False

(h) True

MR. 39 Task Analysis.

MR. 40 a) False

b) False

c) True

d) False

e) True

f) False

MR. 41 a) Physical Integration

b) Social Integration

c) Societal Integration

MR. 42 Ensure that the child has neck control, place the child on the back. Hold his fingers and pull him to sitting position. See that the legs are stretched and spread apart to get balance. Support the back with the palm and slowly reduce the support. Keep toys in front of the child so that the child is busy with them.

MR. 43 Look for the tone of the muscles of the child. Put him in standing position with support and see whether he can place both the feet uniformly on the ground and himself. Have the child hold your fingers with both his hands. Pull him upto standing position and keep talking to him as you do this. Slowly withdraw one hand and let him hold only one hand and stand. Gradually withdraw

the second hand also. Let him stand. See that his feet are placed apart to balance when you withdraw total help.

MR. 44 See whether the child is mobile. Check for motor problems. Obseeve and record the time of urination and bowel movements continuously for as period of one week. Using this record as a reference takethe child to toilet 3 to 5 minutes before the noted time. Use one code word always when you make him sit on the toilet or in the toilet area.

MR. 45 decrease and increase

MR. 46 decrease and increase

MR. 47 Observable and measurable

MR. 48 a) Identification of the problem
b) Defining target behaviours
c) Behaviour recording.
d) Functional analysis.
e) Treatment procedure.

MR. 49 a) True
b) False
c) False
d) True
e) False

MR. 50 a) Restructuring the environment
b) Extinction
c) Punishment
d) Differential Reinforcement

MR. 51 (a) Contigency
(b) Immediacy
(c) Consistency
(d) Clarity

MR. 52 (a) (4)
(b) (3)
(c) (1)
(d) (2)

MR. 53 Forward and Backward

MR. 54 (a) Fixed Ratio
(b) Variable Ratio
(c) Fixed Interval
(d) Variable Interval

MR. 55 (a) Token programme
(b) Shaping
(c) Chaining
(d) Prompting

MR. 56 (a) Sincerity
(b) Reassuring
(c) Effective communication
(d) Emotional stability

MR. 57 (a) Mentally Retarded child can be trained.
(b) Mental Retardation is not an infectious disease.
(c) Mental Retardation can be prevented
(d) Step by step training of a mentally retarded child is the key to success.

MR. 58 (a) Fale (c) False
(b) True (d) True

~~MRxx59~~
VH.59 a) eye and the brain
b) myopia
c) retrolental fibroplasia (RLF) and ~~xxxxx~~ maternal rubella.
d) Retrolental fibroplasia
e) blind or partially seeing
f) 20/200 and 20/70
g) visual arc.
h) snellen chart
i) the negative attitudes of those who can see, the integration of blind children with seeing peers and inservice training for teachers.
j) orientation and mobility
k) tactile, visual and auditory
l) residential
m) concept
n) forms or discriminate specified

o) 20 feet away
p) visual information brain
q) 20/20 vision
r) legally blind
s) personality and mental make-up
t) 20 feet 200 feet

VH 60. a) False
b) True
c) True
d) True
e) True
f) False
g) True
h) False
i) False
j) True
k) False
l) True
m) False
n) False

VH 61. Visually impaired children are those who differ from normally seeing children to such an extent that it is necessary to provide them with specially trained teachers, specially designed or adapted curricular materials, and specially designed educational aids, so that they can realize ~~x~~ their full potential.

VH 62. The index of 20/150 means that an object which can be seen clearly from a distance of 150 feet by a normally seeing person must be 20 feet from the visually impaired person to be seen clearly.

VH 63. A blind child is one whose visual loss indicates that he must use braille and other tactile and auditory materials to learn.
A partially seeing child has some useful vision and uses print and other visual materials in his educational programme.

VH 64. a) Child appears clumsy in a new situation and has trouble walking.

b) Child holds head in awkward position or holds material close to eyes.

c) Child constantly asks someone to tell him what is going on.

d) Child "tunes out" when information is on chalkboard or books he cannot read.

e) Child is inordinately affected by glare from sun and not able to see things at certain times of day.

f) Child has a pronounced squint, rubs eyes excessively and pushes eyeball with finger or knuckle.

g) Child has obvious physiological anomalies or signs of eye disease, such as red swollen lids, crusts on lids or crossed eyes.

VH 65. a) Restrictions in the range and variety of experiences.

b) Restrictions in the ability to move about in the environment and observe people and objects around them.

c) Restrictions in their integration into all aspects of their environment.

VH 66. eyeglass magnifiers; stand magnifiers; hand-held magnifiers; telescopic aids; television viewers.

VH 67. a) braille
b) paperless brailler
c) optacon (optical-to-tactile converter)
d) Kurzweil Reading Machine.

VH 68. a) Special class plan
b) Cooperative class plan
c) Resource room plan
d) Itinerant teacher plan
e) teacher consultant plan

VH 69. a) eye examination report
b) medical report
c) educational assessments
d) reports of behavioural observations by parents and teachers.
e) any assessment information that might be helpful in placement.

VH 70. a) those developed for visually impaired

b) those adapted for use with visually impaired

c) those developed for use with seeing population and used as is for visually impaired.

VH 71. Visual efficiency

sensory abilities

other impairments

achievement

motor performance

language

intelligence

VH 72. b)

VH 73. a)

VH 74. c)

VH 75. a)

VH 76. b)

VH 77. b)

VH 78. c)

VH 79. b)

VH 80. a)

VH 81 c)

VH 82. b)

VH 83. b)

VH 84. c)

VH 85. c)

VH 86. b)

VH 87. b)

VH 88. c)

VH 89. b)

VH 90. c)

VH 91. a)

VH 92. b)

HH.93. a) Cortex

b) fifth month

c) deaf

d) functional

e) sensori-neural

f) central auditory disorder

g) audiogram

h) 500, 1000; and 2000

i) speech discrimination.

j) 12 months

k) 60-80 , 2 years

l) 80

m) pediatrician, Otologist

n) Auditory training

o) lip reading

p) Oralists

q) audiologists

r) residential setting
day school, special class and
resource room

s) 40 and 60

t) speech and language
educational, vocational social and
emotional

u) louder, clearer

v) hard of hearing, deaf

w) Oral and manual

HH. 94. a) False
b) False
c) False
d) False
e) True
f) False
g) False
h) True
i) False
j) False
k) False
l) True

HH. 95 a) transmitter
b) medium
c) receiver

HH. 96 Sound is created by the vibration of some object. This vibration is carried across-some medium and can be heard by the ear.

HH. 97 a) conductive
b) sensori-neural
c) mixed
d) functional
e) central

HH. 98 a) illness or disease for mother during pregnancy.
b) child does not react to sounds.
c) child does not engage in normal amount of vocal play.
d) child does not pay attention in class.
e) child says "huh" in response to questions.
f) child cannot localize sound.

HH. 99 a) Pure tone audiometric screening
b) Pure tone threshold audiometry
c) Speech audiometry
d) sound field audiometry
e) Behavioural play audiometry
f) impedance audiometry
g) evoked response audiometry

HH.100 a) language/speech development
b) educational adjustment
c) vocational adjustment
d) social adjustment
e) personality and emotional adjustment

HH.101 a) earmold not seated properly in the ear
b) earmold is too loose
c) may need new earmold
d) earmold and receiver not firmly attached.

HH.102 a) history of hereditary hearing loss
b) infection or illness of the mother during pregnancy
c) defects of ears, nose, or throat
d) low birth weight
e) prematurity
f) accident, infections, or illness of the child.

HH.103 a) Frequent earaches or ear discharge
b) poor articulation, consonant sounds omitted
c) wrong answers given to easy questions
d) child often does not respond when called
e) hearing appears better when child faces speaker
f) child asks to have things repeated
g) child turns TV or radio up too loud

HH.104

HH.104.1 d)

HH.104.2 d)

HH.104.3 a)

HH.104.4 d)

HH.104.5 b)

HH.104.6 b)

HH.104.7 c)

HH.104.8 a)

104.9 d)

104.10 b)

104.11 b)

104.12 d)

104.13 a)

104.14 c)

104.15 d)

HH.105 mild - 20 to 40 decibels
moderate - 40 to 60 decibels
severe - 60 to 80 decibels
profound - more than 80 decibels

LD.106. a) discrepancy

b) manifestation

c) focus

d) integrities

LD.107. a) oral expression

b) basic reading skills

c) math reasoning

d) written expression

e) listening comprehension

f) math calculation

g) reading comprehension

LD.108. a) labels do not really define discrete groups of individuals; they do not account for overlap between categories.

b) little evidence exists to support the use of one educational treatment for any particular label.

c) Biased tests can cause mislabeling.

LD.109. a) observed consistently over time.

b) resistant to simple remedial teaching methods.

c) accompanied by a significant gap between achievement and ability.

LD.110. a) Attention difficulty

b) Perceptual problems

c) Poor motivation/attitude

d) Poor sound/symbol association

e) Memory problems

f) Language deficits

g) Transfer difficulties

LD.111. a) Physical

b) Environmental

c) Psychological

OH.112 a) True
b) True
c) True
d) False
e) False
f) True
g) True
h) True
i) False
j) False
k) False
l) False

OH.113 a) plegia
b) Pre-natal, Peri-natal,
Post-natal
c) congenital heart defect
d) breathing
e) diet and medication (insulin)
f) psychomotor
g) grand mal
h) petit mal seizure
i) ANSI
j) 32
k) four
l) 40
m) half inch

OH.114. a) cerebral palsy
b) muscular dystrophy
c) polio
d) spina bifida
e) spinal muscular atrophy
f) spinal cord injuries
g) arthrogryphosis
h) osteogenesis imperfecta
i) Juvenile reheumatoid arthritis
j) Other musculoskeletal disorders

OH.115. a) Congenital heart defects
b) Cystic fibrosis
c) diabetes
d) asthma

OH.116. a) Petit Mal
b) Grand Mal
c) Psychomotor

OH.117. a) spastic
b) athetosis
c) ataxia
d) rigidity
e) tremor
f) mixed

OH.118. a) Communication disorders
b) Sensory disorders
c) Intellectual ability
d) Convulsive disorders

OH.119. Physical Therapy

OH.120. When seizure activity continues for more than five minutes, or when it appears that the person is going into repeated grand mal seizures.

OH.121. A prosthesis replaces a body part and an orthosis supports or assists the body.

OH.122. When a careful evaluation of the potential effect of the device has not been conducted.

OH.123. When medical, travel, transfer and lifting, self-care, and positioning needs can all be appropriately met in the regular classroom.

OH.124. The existance of specific problems that would seriously interfere with the children's education in the regular classroom or medical, transfer and lifting, self-care, or positioning needs that can only be met by placement in the self-contained special class.

OH.125. a) Medical Does the child take medication ? if so, how often and in what amounts ?

b) Travel Does the child require special arrangements to travel within the school building or the classroom ?

c) Transfer How is the child transferred on and off the School bus ?

d) Communication Can the child make his needs known to the teacher ? How ?

e) Self-Care What special equipment does the child need ?

f) Positioning What positions are best for specific academic acativities ?

*****

CASE RECORD

SECTION -I : IDENTIFICATION DATA

1.1 Name

1.2 Date of Birth

1.3 Age

1.4 Sex

1.5 Education

1.6 Occupation

1.7 Income

1.8 Father's name

1.9 Mother's name

1.10 Guardian's name

1.11 Address and Phone No.

Present Local Address

Permanent Address

Native Place Address

0.1 Date

0.2 Regd. No.

0.3 Admission No.

0.4 Referred by

1.12 Socio-economic status of the family

High Middle Low

1.13 Rural / Urban / Semi-urban

1.14 Religion

1.15 Caste

1.16 Languages spoken (Encircle Mother Tongue)

SECTION -II

2.1 Informant's name and relationship with the case

2.2 Reliability of information

- Duration of contact with the case

- Accuracy of information

2.3 Present complaints, duration, nature of onset and progression (for each complaint - to be listed in verbatim - Narrative history)

2.4 Previous interventions (Nature of intervention, duration and consequence to be listed in chronological order)

- Drugs : Taken / Not taken /Continued /Discontinued
- Professional : Medical / other help
- Faith healers / Religious help
- others

SECTION -III CHILDHOOD HISTORY

3.1 P-renatal

Pregnancy

Wanted/Unwanted

Age of parents at conception

Exposure to x-ray

Attempted abortion

Threatened abortion

Convulsions

Foetal movements

Normal/Excessive/Sluggish

Drug intake

Rh Imcompatiability

Trauma

Swelling of feet

Maternal Illnessess

- Diabetes
- Hyper tension
- Jaundice
- Sexually transmitted diseases

Nutritional status of mother

Any other

Detail

3.2 Natal

Home/Hospital Delivery

Full term/prematu

Labour prolonged/induced

Normal/Instrumenta delivery

Caesarean

Abnormal presentat

Prolapsed Cord

Normal birth cry

Delayed birth cry

Jaundice

Infections

Birth weight Normal/low/high

Maternal convuls

Excessive bleedi

Twin

Any other

3.3 Neonatal

Colour of the Baby

Pink/Yellow/Blue/Pale

Respiratory distress

Activity of the Baby

Normal/Jittery/Lethargic

Feeding History

- breast fed
- bottle fed
- demand feeding
- scheduled feeding

Feeding problem

Bowel movement

Jaundice

Trauma

Infections

Convulsions

Congental anamolies

Baby care

Any other

Details

3.4 Post-natal Medical History

Exanthemata

Infection

Injury

Convulsions

Jaundice

Nutritional disorders

Any other

3.5 Immunization History

	Primary	Booster
Polio		
Diptheria		
Pertusis		
Tetanus		
BCG		
Measles		
Typhoid		
Cholera		
Gamma Globulins		

3.6 Developmental Milestones

		Normal/Delayed
Smiling	(6 weeks	
Head control	(4 months)	
Rolling over	(5 to 7 months)	
Sitting	(6 to 7 months)	
Crawling	(8 to 10 months)	
Standing	(11 months)	
Walking	(12 to 14 months)	
Teething	(4 to 6 at 1 Year)	
Babling	(8 months	
First meaningful word	(1 year)	
Ten meaningful words	(1½ years)	
Small phrases	(2 years)	
Fluent speech	(3 years)	
Bowel control		
Bladder control		

3.7 Emotional and behavioural problems (if any)

SECTION -IV SCHOOL HISTORY

4.1 Attended/ Not attended / Discontinued

4.2 Nature of school

Normal / Special / Integrated / Others

4.3 Address of School

4.4 Age at joining

4.5 Class

4.6 Attendance

Regular / Irregular

Reason for irregularity

does not go/wanders/fearful/financial problem/any other

4.7 Frequency and reasons for change of school

4.8 Scholastic performance

Good / Never failed / Average / Poor / Failed

4.9 Peer group adjustment

4.10 Teacher's Report

- Scholastic performance

  Good / Fair / Poor / Not known

- Class-room behaviour

  Favourable / Unfavourable / Not known

4.11 Any other information

SECTION -V PLAY

(Information to be obtained from Guardian / Parent)

5.1 Normal

5.2 Indifferent / enjoys play

5.3 Plays most of the time

5.4 Prefers to play with animals

5.5 Prefers to play alone

5.6 Plays with older/younger/peer group/problems in group activity

5.7 Behaviour at play and in group situations

5.8 Play games governed by rules

5.9 Leisure time activities

5.10 Special preference for play activities

Details if any

SECTION -VI SEXUAL HISTORY

SECTION -VII FAMILY HISTORY

7.1 Pedegree chart

7.2 Household composition
(Information should include all members of the family, grand parents, and significant others)

NOTE: Indicate status of head of family

No.	Name	Relationship to the case and mention head of the family	Age	Sex	Education	Health	Attachment to the case

7.3 Type of family

Joint / Nuclear / Extended /Broken / other.

7.4 Consanguinity

I cousin / II cousin / Others / Unrelated

(Describe the relationship in detail)

7.5 Family history of mental illness, mental retardation epilepsy and others

(Give details)

SECTION -VIII HOME ENVIRONMENT

8.1 Parental involvement

- Personal needs of the case
- Educational activities
- Play and leisure activities

8.2 Physical Environment

- Independent / Shared accommodation
- No. of rooms
- Percentage of time spent by family members with case (Mention who spends most of time with the case)

SECTION -IX SOCIAL ENVIRONMENT

9.1 Neighbourhood Interaction

- visits to the family
- Family's visits outside

9.2 Participation in socio-religious activities

9.3 Support of extended family

SECTION -X MANAGEMENT PROBLEMS WITH REGARD TO THE CASE

SECTION -XI MISCONCEPTIONS (IF ANY)

SECTION -XII EXPECTATIONS

SECTION -XIII PHYSICAL EXAMINATION

SECTION -XIV INTERVIEW WITH CASE AND OBSERVATION

SECTION -XV PROVISIONAL DIAGNOSIS

SECTION -XVI MANAGEMENT PLAN

Signature Date

Dk

SKILL ASSESSMENT

Date:

Name :

Adm. No.:

Age :
(Assess every 4 months)

SKILLS	I Assessment	II Assessment	III Assessment
I. SELF-HELP			
- Feeding			
- Toileting			
- Brushing			
- Bathing			
- Dressing			
- Grooming			
- Wearing slippers/shoes			
II. MOTOR			
GROSS MOTOR			
- Standing			
- Walking			
- Climbing stairs			
- Jumping			
- Running			
- Throwing and catching ball			
FINE MOTOR			
- Mixing food			
- Picking up small stones			
- Threading big beads			
- Building a tower of blocks			

III. SENSORY SKILLS HEARING

- Reaction to loud noise
- Reaction when called by name
- Reaction to radio sounds
- Presence/history of ear discharge

VISION

- Following moving object by the eyes
- Eye contact
- Reaction to torch light

IV. LANGUAGE SKILLS, EXPRESSIVE SKILLS

- Gestural/sounds/words communicated by the child
- Intimation of words heard
- Expression of needs
- Using simple phrases
- Naming body parts
- Using 4 word sentences
- Asking simple questions
- Telling a simple story

RECEPTIVE SKILLS

- Response when called by name
- Response to simple instructions such as 'look at me'
- Response to requests such as 'No or Stop'
- Listening to a story
- Following two step directions.

V. CONCEPTION FORMATION

- Colour
- Shape
- Texture
- Size
- Sex
- Number
- Time
- Money
- Identification of familiar objects
- Use of familiar objects
- Awareness of danger hazards

VI. ACADEMIC SKILLS

- Reading
- Writing
- Arithmetic

VII. PREVOCATIONAL SKILLS

VIII. - Items of interest
- Items of dislike

IX. Any peculiar behaviour/behaviour problems observed

X. Any other

XI. Recommendations

PSYCHOLOGICAL ASSESSMENT

PART - I

Name : D.O.B : Date :

Sex : Age : Regd No:

Education: Occupation : Language of testing:

I. MENTAL TESTING:

1. Developmental Age : D.Q. :
2. Mental Age : I.Q. :
3. Social Age : S.Q :

II. LEVEL OF GENERAL MENTAL ABILITY

1. Profound mental retardation
2. Severe mental retardation
3. Moderate mental retardation
4. Mild mental retardation
5. Borderline intelligence
6. Normal intelligence

III. BRIEF SUMMARY OF OBSERVATIONS AND TEST FINDINGS:

IV. RECOMMENDATIONS:

PART II - DETAILS OF PSYCHOLOGICAL ASSESSMENT

V. TESTS ADMINISTERED :

1. 2. 3. 4.

VI. BEHAVIOUR OBSERVATIONS:

1. Cooperation :
2. Comprehension of test instructions:
3. Speech and communication :
4. Attention - Concentration :
5. Other

VII. TEST RESULTS

PROFILE ANALYSIS

No	Area	Age/I.Q
1		
2		
3		
4		
5		
6		
7		
8		
9		

VIII. PROBLEMATIC BEHAVIOUR REPORTED:

IX. ANY SIGNIFICANT OBSERVATIONS ABOUT THE CASE WITH REGARD TO:

1. Family interaction/ adjustment patterns
2. School and/ or peer group adjustment
3. General Social adjustment (neighbours, work situation, strangers, relatives etc.)
4. Significant stressors for the case:
5. Others

Signature:- Examiner:

Consultant:

PROFORMA FOR BEHAVIOUR MODIFICATION - CASE SUBMISSIONS

Section I

1. Name
2. Date of Birth
3. Age
4. Regn. No.
5. Sex
6. Father's Education
7. Father's Occupation
8. Mother's Education
9. Mother's Occupation
10. Socio-economic status - I/II/III/IV/V
11. Languages spoken/understood
12. Locality - 1/2/3/4
13. Key informant/informants
14. Reliability
15. Referral source for behaviour modification
16. Reasons for referral

Section - II

1. Presenting complaints and duration
2. Significant background information:
   a) medical history
   b) developmental history
   c) educational history
   d) Family history
   e) Other

3. Daily Routine:
   a) Activities of daily living
   b) recreational and play activities

Contd....p/2

c) community orientation and mobility

4. Functional Analysis :
    - a) Antecedents
    - b) Consequences
    - c) Reinforcer identification
    - d) Behaviour assets

5. Therapeutic Programming and Intervention :
    - a) Conditions : Time/Place
    - b) Persons responsible and mediators
    - c) Materials
    - d) Behavioural techniques
    - d) Procedure

6. Evaluation :

7. Summary:

NAME & SIGNATURE:

MALADAPTIVE BEHAVIOUR CHECKLIST

Name: Date: Regd.No./Date:

Age: Sex : Informants:

Key : N= Never; O= Occasionally; F= Frequently.

Encircle the statements which best describe the child/client's behaviour being evaluated.

I. PHYSICAL HARM TOWARDS OTHERS	HOME	SPECIFY (No. of times per hour/day/week)	SCHOOL	SPECIFY (No. of times per hour/day/week)
1. Threatens=Physical violence	N O F		N O F	
2. Pushes others	N O F		N O F	
3. Pinches others	N O F		N O F	
4. Pulls hair/ear/body parts of others	N O F		N O F	
5. Bites others	N O F		N O F	
6. Kicks others	N O F		N O F	
7. Hits/slaps others	N O F		N O F	
8. Attacks or pokes others with weapons	N O F		N O F	
9. Throws objects at others	N O F		N O F	
Others	N O F		N O F	
	N O F		N O F	
	N O F		N O F	

II. DAMAGES PROPERTY

1. Tears/pulls threads from clothing	N O F		N O F	
2. Tears up books/peper/magazines	N O F		N O F	
3. Breaks objects/glass	N O F		N O F	
4. Damages possessions/toys	N O F		N O F	
5. Damages furniture	N O F		N O F	
Others	N O F		N O F	
	N O F		N O F	
	N O F		N O F	

Contd....p/2

III. MISBEHAVES WITH OTHERS

1. Pulls objects from others	N O F	N O F
2. Does not allow others to carry on their own activities	N O F	N O F
3. Makes loud noises when others are working/reading/ talking etc.	N O F	N O F
4. Take others possessions without their permission openly	N O F	N O F
5. Knocks things down	N O F	N O F
6. Tell others what to do	N O F	N O F
7. Uses obusive language	N O F	N O F
Others	N O F	N O F
	N O F	N O F
	N O F	N O F

IV. TEMPER TANTRUMS

1. Crying excessively	N O F	N O F
2. Screaming/Yelling	N O F	N O F
3. Slamming doors	N O F	N O F
4. Banging objects	N O F	N O F
5. Stemping feet	N O F	N O F
6. Kicking legs while on floor/ rolling on floor	N O F	N O F
7. Spitting on others	N O F	N O F
Others	N O F	N O F
	N O F	N O F
	N O F	N O F

V. SELF - INJURIOUS BEHAVIOURS

1. Head banging	N O F	N O F
2. Biting self	N O F	N O F
3. Cutting self	N O F	N O F
4. Pulling own hair	N O F	N O F
5. Picking at wounds on own body	N O F	N O F
6. Scratching/Rubbing self	N O F	N O F
7. Beating self	N O F	N O F
8. Putting objects into eyes/nose/ears	N O F	N O F
9. Eating inedible objects	N O F	N O F
Others	N O F	N O F
	N O F	N O F
	N O F	N O F

	HOME	SPECIFY (No. of times per hour/day week)	SCHOOL	SPECIFY (No. of times per hour/day week)
VI. REPETITIVE/STEREOTYPED BEHAVIOURS				
1. Thumb sucking/putting fingers into mouth	N O F		N O F	
2. Nail biting	N O F		N O F	
3. Nose picking	N O F		N O F	
4. Teeth grinding	N O F		N O F	
5. Head nodding	N O F		N O F	
6. Body rocking	N O F		N O F	
7. Tapping feet continuously	N O F		N O F	
8. Waving hands/Body parts continuously	N O F		N O F	
9. Swinging round and round	N O F		N O F	
10. Jumping up and down	N O F		N O F	
11. Does the same activity over and over again	N O F		N O F	
12. Rotating objects	N O F		N O F	
Others	N O F		N O F	
	N O F		N O F	
	N O F		N O F	
VII. ODD BEHAVIOURS				
1. Laughs to self/laughs inappropriately	N O F		N O F	
2. Talks to self	N O F		N O F	
3. Makes peculiar/ unpleasant sounds	N O F		N O F	
4. Smears dirt/Feaces on self	N O F		N O F	
5. Plays with unwanted objects excessively (Clothes, Chappals, strings, feaces, water, dirt etc.)	N O F		N O F	
6. Hoards unwanted objects	N O F		N O F	
7. Stands close to People	N O F		N O F	
8. Talks irrelevantly	N O F		N O F	
9. Kisses/Hugs/Shakes hands/Licks people unnecessarily	N O F		N O F	
10. Smells objects	N O F		N O F	

Contd....p/4

	HOME	SPECIFY (No. of times per hour/day week)	SCHOOL	SPECIFY (No. of times per hour/day week)
11. Sits with body up, body curled up.	N O F		N O F	
12. Hides face in group situations	N O F		N O F	
13. Stares blankly	N O F		N O F	
14. Sits, stands lies down for long periods of time without doing anything	N O F		N O F	
Others	N O F		N O F	
VIII. ANTISOCIAL BEHAVIOURS				
1. Lies	N O F		N O F	
2. Steals	N O F		N O F	
3. Makes obscene gestures	N O F		N O F	
4. Undresses in front of others	N O F		N O F	
5. Exposes body parts in appropriately	N O F		N O F	
6. Makes sexual overtures to members of the opposite sex	N O F		N O F	
7. Gambles	N O F		N O F	
8. Uses vulgar language	N O F		N O F	
9. Touches others or own private parts in public	N O F		N O F	
Others	N O F		N O F	
	N O F		N O F	
	N O F		N O F	
IX. REBELLIOUS BEHAVIOURS				
1. Refuses to obey commands	N O F		N O F	
2. Refuses to participate in regular activities	N O F		N O F	
3. Refuses to perform regular routine on time (eating, walking, dressing, sleeping etc.)	N O F		N O F	
4. Refuses to attend to personal hygiene and self-care	N O F		N O F	
5. Does opposite of what is requested	N O F		N O F	

Contd....p/5

	HOME	SPECIFY (No. of times per hour/day week)	SCHOOL	SPECIFY (No. of times per hour/day/week)
6. Takes very long intentionally to complete tasks	N O F		N O F	
7. Talks rudely/becomes argumentative.	N O F		N O F	
8. Wanders outside home/school	N O F		N O F	
9. Runs away from home/school	N O F		N O F	
Others	N O F		N O F	
	N O F		N O F	
	N O F		N O F	

X. HYPERACTIVE BEHAVIOURS

	HOME	SPECIFY	SCHOOL	SPECIFY
1. Does not pay attention to the task at hand	N O F		N O F	
2. Does not continue with the task at hand for required time	N O F		N O F	
3. Does not sit at one place for required time	N O F		N O F	
Others	N O F		N O F	
	N O F		N O F	
	N O F		N O F	

XI. FEARS

	HOME	SPECIFY	SCHOOL	SPECIFY
1. Fear of animals (Specify ________)	N O F		N O F	
2. Fear of objects (Specify ________)	N O F		N O F	
3. Fear of places (Specify ________)	N O F		N O F	
4. Fear of persons (Specify ________)	N O F		N O F	
Others	N O F		N O F	
	N O F		N O F	
	N O F		N O F	

XII. ANY OTHER

EXAMINER

CONSULTANT PSYCHOLOGIST

CHECK LIST FOR OBSERVATION OF VERBAL COMMUNICATION SKILLS

Name : Age/Sex: Regd.No. Date:

Instructions: write the specific responses of the child for each times.

I. MODES OF COMMUNICATION:

1. Eye contact
2. Manual gestures
3. Conversation
4. Reading
5. Mixing gestures with few words

II. RECEPTIVE LANGUAGE SKILLS:

1. Turining head towards the source of sound
2. Responding to his name
3. Response on hearing 'no' or 'stop'
4. Response to simple instructions like ' look at me ' with 2-3 seconds eye contact.
5. Response with simple requests like 'give me the ball'
6. Response to simple instructions such as 'come here'
7. Pointing to 15 common objects like chappal, pencil, shirt, light etc. upon request.
8. Response when others make non verbal gestures such as frowning, crying, suiting,etc.
9. Following 2 step directions such as give me the 'pen and switch on the light'.
10. Listening to a story for 3 minutes.
11. Identifying 3 colours in a group of colours. When named.
12. Answering simple questions, after listening to a simple story.

III. EXPRESSIVE LANGUAGE SKILLS :

1. Making vocal sounds
2. Using voice sounds to get attention.

Contd.....p/2

3. Indication of 'yes' or 'no' responses to questions such as do you want a biscuit ?

4. Imitation of few words heard.

5. Using simple words to indicate his needs such as food.

6. Naming 5 body pants when asked.

7. Naming of 10 common objects when asked.

8. Using 2 word phrases such as 'give food'.

9. Using simple sentences such as 'I want the toy'.

10. Asking simple questions like what is this ? Why can't I ?

11. Using pronouns such as I, you, mine etc.

12. Carrying on a simple meaningful conversation for 5 minutes.

13. Telling a simple story in a ligical order.

14. Telling simple jokes.

IV. OTHER ASPECTS OF SPEECH :

1. Clarity of speech

2. The sounds the child seems to have problems with while speaking.

3. Movements of tongue ?

4. Movement of the lips

5. Conversation: (indifferent/No speech/nuclear/gestural/echolatic/sensible)

6. Any other.

INDIVIDUALIZED TRAINING PROGRAMME

MANUAL

The Individualized educational programmes are developed specifically to meet the educational and training needs of each child. As no two mentally retarded children have similar abilities and needs, and, as majority of the mentally retarded children require services from more than one discipline such as special education, speech pathology and audiology, psychology, physiotherapy, occupational therapy, and medicine, it is essential that a comprehensive service programme is developed for each child, based on his needs, including the appropriate input from various disciplines. Development of such an I.E.P. is an important component of diagnostic prescriptive process.

The ITP has two sections, Part A and Part B. Part A consists of general information about the child, person initiating the programme and the overall goals for the child. Part B consists of specific programming for a skill or behaviour.

GUIDELINES FOR FILLING UP PART A

1. Name :

Give the child's full name and pet name if any in brackets.

2. Date of birth (age) :

Given as in the records.

3. Sex :

4. Address :

Give the present address.

5. Mother tongue/languages spoken:

It is essential that the child is exposed to one language consistently. Therefore, record the details of the child's mother tongue as well as other language spoken by the child. Circle the mother tongue.

6. Regn. No.:

Give the number of the registration in the institute/school.

7. Class/Roll No.:

In case of a special school give the class group of the child and the roll number.

8. Date of writing the ITP :

ITP is generally written on a particular day when the team meets and decides on the programme for the child. Write the date of such a meeting.

9. ITP No. :

Each child will have number of ITPs following one after the other. Write the number of the particular ITP.

..3..

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10. Significant information of the M.R. person. Includes details on
    i) the degree of retardation,
    ii) associated conditions such as visual, hearing or orthopaedic handicap, medical conditions such as epilepsy hyperkinesis and behaviour problems,
    iii) family background of the child,
    iv) strengths and weakness of the child, and
    v) medicine taken if any.

11. Goals :

    Mention the overall goals set for the child after assessment, and the order of priority, if these are more than one goal.

12. Staff responsible :

    The name of the staff member, whoever will be responsible for carrying out and coordinating the ITP should be mentioned here.

GUIDELINES FOR FILLING UP PART B

Part B consists of the specific programme for the child with precise instructions to carry out the programme.

13. Skill/Behaviour

    Mention here, the skill on which the MR child/individual is to be trained for example, feeding skill, dressing skill, or writing skill and so on. If it is a behaviour which is to be modified, mention the name of the behaviour, for example, head banging, eye poking or body rocking, and so on.

14. Current level/baseline :

Write in behavioural terms what exactly the mentally retarded person is able to do in the given skill or behaviour for example, if the skill is combing hair, the current level can be "picks up comb, holds it appropriately". Places the comb on the head but does not comb the hair in one direction uniformly. Cannot make the partition in the hair.

15. If it is a behaviour, mention what provokes the behaviour, how exactly the M.R. person behaves and for how long.

16. Objectives :

Mention in behavioural terms what is the objective. Mention the
(a) condition,
(b) behaviour,
(c) level of performance, and
(d) dead line.
To illustrate, an example is given below:

(a) When asked
(b) the child (name of the child) indicate to the appropriate picture of the fruit named,
(c) 8 out of 10 times correctly, and
(d) on or before 15.12.1986.

17. Procedure :

Give step by step procedure for meeting the objective. Do not have ambigious directions. The steps must be specific and clear. Remember to mention the reinforces to be used and when.

18. Materials needed :

Write the materials needed for developing the particular skill or improving the particular behaviour.

19. Evaluation :

Leave this column blank when the ITP is written after the specific duration when the child is evaluated for progress or problems, fill this column by noting down the observations. This is in turn forms the baseline or current level for the next ITP to be written.

To quantify the progress of the child, performance may be ranked from 1 to 7 as shown below :

Below base line = 1

No progress = 2

25% progress = 3

50% progress = 4

75% progress = 5

100% progress = 6

100% progress before deadline = 7

...6...

Circle the appropriate number.
To get the percentage of progress, measure by comparing with the objective, 8 out of 10 times. How many times the child is able to do. Find out the percentage of marks.

Skills development in speech and language, motor activities for daily living and academic areas can be written in this format as also the problem behaviours to be corrected. Thus the format is of use for special educators, speech pathologists, psychologists and the physiotherapists.

20. Problem encountered:

Write here clearly, the problem faced while carrying out the programme which may be specific to the child and the situation.

INDIVIDUALIZED TRAINING PROGRAMME

PART – A

1. Name :

2. Date of birth (age) :

3. Sex :

4. Address :

5. Mother tongue/language(s) spoken by the MR person :

6. Registration No.:

7. Class and Roll No. :

8. Date of filling ITP :

9. ITP No. :

10. Significant information on the M.R. person :

11. Goals :

12. Staff responsible :

...8...

PART B

Skill/ behaviour	Current level/ baseline	Objectives	Procedure	Materials needed	Evaluation				
					1	2	3	4	5